ACCOUNT

OF AN

EXPEDITION

FROM PITTSBURGH

TO

THE ROCKY MOUNTAINS,

PERFORMED

IN THE YEARS 1819, 1820.

BY ORDER OF THE

HON. J. C. CALHOUN, SECRETARY OF WAR,

UNDER THE COMMAND OF

MAJ. S. H. LONG, OF THE U. S. TOP. ENGINEERS.

FROM THE NOTES OF MAJOR LONG, MR. T. SAY,
AND OTHER GENTLEMEN OF THE PARTY,
BY EDWIN JAMES,
BOTANIST AND GEOLOGIST TO THE EXPEDITION.

IN THREE VOLUMES.

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TO

THE HONOURABLE

JOHN C. CALHOUN,

SECRETARY OF WAR;

WHOSE LIBERAL VIEWS, ENLIGHTENED POLICY, AND
JUDICIOUS MEASURES,
WHILE THEY HAVE BEEN PROSECUTED WITH THE UTMOST
CIRCUMSPECTION AND ECONOMY,
HAVE CONTRIBUTED IN AN EMINENT DEGREE
TO THE
ADVANCEMENT OF THE NATIONAL CHARACTER OF THE
UNITED STATES,
BOTH IN SCIENCE AND POLITICS;

THE FOLLOWING PAGES
ARE MOST RESPECTFULLY DEDICATED BY
THE AUTHORS,
AS A FEEBLE TESTIMONIAL OF
THEIR HIGH CONSIDERATION OF HIS TALENTS AND PATRIOTISM,
AND A GRATEFUL ACKNOWLEDGMENT OF
HIS INDULGENCE AND PATRONAGE.

NOTES.

NOTES.

NOTE [I]. Page 5.

Triton lateralis. SAY.— *Body* and extremity above brown, with irregular black spots; *tail* much compressed, subacutely edged above and beneath, lanceolate; a black vitta from the nostrils passes through the eyes, and is dilated on the sides, and becomes obsolete on the tail; a vertebral indented line, from the neck to the origin of the caudal carina, more faintly indented on the head; *head* somewhat rectilineary attenuated from the anterior branchia, to the vicinity of the nostril, and truncate or subemarginate before; *nostrils* minute; *eyes* very small, whitish, crossed with the lateral line of the head; *beneath* pale flesh-colour; *chin* and *jaws* to the branchiæ and and *tail* from the posterior feet, with the exception of the areola of the anus, coloured like the back; *mouth* moderate, angles beneath the eyes; *lips* covering the jaws freely, inferior lip with a duplicature each side, which is white and covered by the superior lip; *tongue* free, fleshy, rounded, extending beyond the angles of the mouth; *teeth*, lower jaw in a single row, obtusely conic, small, rather distant; a few smaller ones near the angle, elevated on a slightly prominent portion of the jaw; *superior jaw*, with a double series of teeth similar to the others, but rather smaller, an unarmed depression corresponding with the elevation in the lower jaw, and a few elevated teeth nearer the angle; *throat* with a duplicated cuticle; branchiæ permanent. Legs short, weak, four-toed.

Total length 10 inches, from the tip of the nose to the vent, 6½ inches.

We caught this animal with the hook and line in the neighbourhood of Pittsburgh, but it is by no means so common there as the Salamandra Alleghaniensis of Michaux, or young alligator.

The colour above is in reality pale, but it is rendered of a brownish appearance by the very numerous confluent points of that colour, which nearly cover the surface of the body;

branchia bright red; peduncles colour of the body. Daudin informs us, that Schneider, in his history of Amphibia, describes an animal very similar to this, found in Lake Champlain, and which Daudin supposes to be the larva of *Triton Alleghaniensis;* Daudin, however, is of the opinion, that the hind feet were mutilated, from the circumstance of their having only four toes.

The late Professor B. S. Barton had heard of this animal, and from the account he received, was led to regard it as a Siren.

Finally, Dr. Mitchell has autoptically described the animal, in the 4th vol. of Silliman's Journal, as a Proteus.

Not supposing the *lateralis* to belong, strictly speaking, to either of these genera, and with a view to ascertain its real nature, we obtained permission from the Academy of Natural Science, to open a specimen belonging to their cabinet, and which was brought from the Ohio by Mr. J. Speakman. The result corresponded with our most confident expectations, showing that the number of its vertebræ is greatly inferior to that of the Proteus, and corresponding with that of the Tritons; and that the pseudo ribs were in an entire series, somewhat superior in proportional length and perfection of form to those of the Proteus, and resembling those of the Triton. It has, therefore, a far more close alliance with the genus Triton, than with any other yet established.

Several animals have been described, to which it is more closely related by the character of the persistent branchia, than it is to the well-known types of the genus, of which the branchia disappear at the age of puberty. Of such animals the following may be instanced:

The *Axolotl* of Mexico. Siren pisciformis of Shaw. Gen. Zool.

The *Tetradactyla* of Lacepede in the Ann. des Mus. vol. x.

The *Siren Operculée* of Beauvois in Philos. Trans. of Phila. vol. iv.

And possibly also, the *Proteus Neo Cæsariensis* of Professor Green.—Jour. A. N. S. vol. i.

These four or five species might with propriety be separated from the genus to which they are referable in the present state of the system, and placed in a separate genus, the external characters of which will be the same as those of Triton, with the exception of the persistent branchia. Its proper station will doubtless be intermediate between Triton and Proteus, but far more closely related to the former.

It may be proper to mention in this place, that the generic name *Triton*, was applied by Laurenti to the Newts, long before Montfort made use of it in Conchology to designate the war conch of the ancient Romans, and of the present inhabitants of Madison's Island.

We are indebted to Dr. Richard Harlan, for the following anatomical observations, on this singular animal.

Alveolar margins of the maxillæ serrated, the spiculæ pointing backwards towards the œsophagus. The œsophagus very large, like that of the serpents, gradually expanding as it descends to form the stomach, which again contracts at the commencement of the intestinal tube; the lining membrane of the œsophagus and stomach, thrown into longitudinal folds, which were continued throughout the intestines; which tube undergoes several enlargements in its course, giving it a sacculated appearance similar to the alimentary canal of the alligator; in the animal under consideration, they form several convolutions previous to their termination into the cloaca; the stomach contained an earth worm. The mesentery transparent, displaying a number of very large lacteals, which, in the present instance, were filled with coagulated chyle. Length of the intestines 10 inches. The ovary is of considerable size, of an oblong figure, lying close to the vertebræ, and opening by a straight duct into the posterior part of the cloaca. *Liver* very large, and apparently (but not certainly) discharged its contents into the stomach. *Lungs* consist of two long membranous bags, which run the whole length of the abdomen, anteriorly to the stomach and intestines; the opening of the larynx scarcely large enough to admit a pin's head; the lungs resemble two long air-bags, more than a true pulmonary apparatus; the cartilaginous laminæ of the branchia, three in number, attached superiorly to the integuments over the cervical vertebræ, converging together beneath or anteriorly, and are attached to a cartilage answering to the os hyoides; the heart, which was extremely small, consisted apparently of one auricle and one ventricle, the aorta soon bifurcated, sending one branch to each pulmonary apparatus to be intimately ramified upon the branchia, resembling so far the circulation of fishes, and differing from the amphibia, in which there is either a double or mixed circulation.

Olfactory apparatus similar to that of fishes, viz. a small aperture near the extremity of the snout leads into a cavity or *cul de sac*, lined by a delicate membrane, plentifully supplied by the fibrillæ of two slender olfactory nerves, which go off from the anterior end of each lobe of the cerebrum. The brain is of an oblong figure, the cerebrum is formed of two lobes, the cerebellum of one lobe situate directly posterior, not much thicker than the medulla oblongata. The optic nerves, which were large in proportion to the organs of vision, took their origin in a very unusual manner. On either side of the medulla oblongata, is given off a large nerve, which proceeds forwards and outwards, and soon after it passes outside of the cavity of the cranium, it divides into two branches, the smaller goes to the eye, the larger is distributed to the superior maxilla. The eye itself is small, and the lens which was coagulated by the spirits, is about half the size of a pin's-head, and of the texture of the lens of a fish when boiled.

The number of vertebræ from the atlas to the last lumbar, is exactly nineteen; to the transverse processes of all of them (after the two first) is attached, by a movable articulation, a small slender spicular of bone, or rib-like process, about one-eighth of an inch in length, which at the same time, they give origin to the large muscles that move the body, offer no obstruction to the lateral curvatures of the animal when in motion, but as to appearance or function, are not to be considered as ribs. The number of vertebræ from the first sacral to the last caudal, is from twenty to thirty-five; they become exceedingly small towards the end of the tail; on the back part of the œsophagus, exterior to the cavity of the cranium, is found on each side, a calcareous concretion, similar to that in the head of the shark.

NOTE [2]. Page 16.

April 3d. Dentaria laciniata, Lamium amplexicaule, Draba verna, Poa anua, Alsine media, Houstonia cerulea, Saxifraga virginiensis.

4th. Anemone hepatica, *Hepatica triloba* of *Pursh*. Flowers varying from blue to white. Alnus serulata, Carpinus Americanus, Satyrium repens, root perennial.

9th. Collected in flower from the south-west side of the Ohio, Sanguinaria canadensis, Hydrocotile bipinnata; root small and round, with small tubers attached to the fibre like radicles, flowers white. Poa brevi-folia.

13th. Glehoma hederacea; this plant covers not only the low grounds, but the wildest hills, particularly in northern exposures. Is it native?

24th. Pulmonaria Virginica: this is a predominant plant on the islands, as well as along the shores of the Alleghany on both sides. Epigæa repens, Phlox divaricata.

25th. Corydalis cucullaria, Trillium erectum, flowers varying from dark purple to white. Anemone thalictroides, Carex oligocarpa, Gnaphalium plantagineum, Potentilla sarmentosa, Obolaria virginica, Acer saccharinum, and A. dasycarpum, still flowering. Also the Celtis occidentalis, Ulmus Americana, and Planera aquatica, past.

27th. Veronica peregrina, and Ranunculus celeratus; both common in the wildest situations and apparently native.

28th. Stellaria pubera, Turritis lævigata, Arabis lyrata, Viola pubescens, Ranunculus hirsutus, Thalictum dioicum, Cercis canadensis, Cerastium vulgatum.

30th. Dentaria diphylla, Trillium sesile, Mitella diphylla, Delphinium tricorne, Arabis thaliana, Caulophillum thalictroides.

May 1st. Carpinus Americanus, Vicia cracca, Ranunculus abortivus, Saxifraga Pennsylvanica, Uvularia grandiflora, *Ph.*

3d. Geranium maculatum. Apple-tree flowering. Veronica officinalis. *Dr. Baldwin*'s Diary.

NOTE [3]. Page 22.

The cotton-wood-tree is of very rapid growth. It has been ascertained that one individual, in the term of twenty-one years, attained the height of one hundred and eight feet, and nine inches, and the diameter of twenty and an half inches, exclusive of the bark. *Barton*'s Supp. Med. and Phys. Jour. p. 71.

NOTE [4]. Page 33.

Nitrate of Potash. — This salt occurs in most of the caves in the western states and territories. It is found in efflorescences and incrustations frequently combined with nitrate of lime. Its colour is grayish or yellowish white. The manufacture of nitre, in the numerous caves in Kentucky, is conducted as follows: The earths containing the nitrates of lime and potash are lixiviated; the lixivium is afterwards passed through the ashes of wood, by the alkali of which the nitrate of lime is decomposed. If the earths, after having been lixiviated, are replaced in the caves, they again become impregnated with the same salts.

One bushel of earth commonly yields from one to four pounds of nitre. The process by which nature supplies the consumption of this important article has not yet been discovered.

Muriate of Soda.—In the United States, common salt has been usually found in solution combined with the sulphates of lime, magnesia, and soda, and with sulphuretted hydrogen gas. The springs yielding the greatest quantity of salt, are those of the Kenhawa, and Little Sandy rivers, the United States' Salines near Shawaneetown, Illinois, Boon's Saline, near Franklin, Missouri, and Lockhart's on the Le Mine river.

The Kenhawa salt-works supply about thirty thousand bushels of salt per annum. The rocks about these springs belong to the secondary formation, and are limestone, variegated sandstone, and bituminous shale: we were informed that two hundred and fifty gallons of this water yield one bushel of salt. At the Salines of the Little Sandy, ten thousand bushels are manufactured yearly. The waters, like those of the Kenhawa, hold in solution muriate and sulphate of soda, sulphate of lime, and probably a small portion of sulphate of magnesia. Limestone and sandstone are the only rocks to be met with in the neighbourhood. The United States' salines, near Shawaneetown, produce at present about a hundred and thirty thousand bushels of salt per annum; they formerly yielded more than two hundred thousand in the same time. There are now seven furnaces in operation: the water is procured from three wells, two of which are rented by Major I. Taylor. At these works the salt water formerly issued from the earth at the surface. A well of sixteen feet deep brought the workmen to a spring, which now discharges sixteen gallons of water per minute. Two hundred and fifty gallons yield fifty pounds of salt. About one thousand yards to the east of this well is a basin, or hollow, one hundred and thirty-five feet in diameter. The soil in and about it is intimately blended with fragments of earthen ware.

In the middle of this basin a well has been sunk, which affords a more concentrated brine than that before mentioned; one hundred and ten gallons yielding fifty pounds of salt.

In digging this well, the first fourteen feet was through a light earth mixed with ashes and fragments of earthen ware: the remaining fourteen through a bed of clay, deeply coloured with oxyde of iron, and containing fragments of pottery. The clay has something the appearance of having been subjected to the action of fire. At the eastern side of the basin appears to have been a drain for the purpose of conveying away the superabundant water. In this drain, about four feet below the surface of the earth, is a layer of charcoal about six inches deep. The stones in the vicinity appear as if they had been burnt. Four miles west of this point, a well has been sunk sixty feet through the following beds.

First — twenty feet of tenacious blue clay, at the bottom of which they came to a small spring of salt water.

Second — another bed of clay, of a similar character, twenty-five feet thick.

Third — a bed of quicksand, about ten feet deep; in which they met with a large vein of salt water.

Bones of the mammoth, and other animals, were found both in the clay and sand. The original reservation at these salines comprised ninety-two thousand one hundred and sixty acres of woodland, and was transferred from the United States to the state of Illinois, at the time of the admission of the latter into the union. The rents amount to ten thousand dollars per annum.

Nitrate of Lime is found in the calcareous caverns of Kentucky, accompanying nitrate of potash, with which it is intimately blended in the earth, on the floors of the caves: it is also sometimes found in delicate accicular crystals, shooting up from the walls and floors of the caverns.

NOTE [5]. Page 36.

Although the range from extreme high to extreme low water amounts to sixty feet perpendicular, in many parts of the Ohio, it does not exceed twenty feet at this place, owing to the width to which the Ohio spreads in this neighbourhood, when the river is high. This may be considered a circumstance much in favour of the place, when compared with the disadvantages most other positions on the Ohio labour under, from inundation in high water, and the difficulty of unlading in low.

NOTE [6]. Page 42.

The cymbidium hiemale of Willdenow, which has been placed by Mr. Nuttall under the genus corallorhiza of Haller, occurs in the fertile soils of the Mississippi, with two radical leaves, as described by the early authors. Mr. N.'s amended description is therefore only applicable to the plant as it occurs in the eastern states, where it is commonly found to have but a single leaf.

Note. [7]. Page 44.

They left the Illinois about the middle of June. Of the rocky cliffs below the confluence of that river, Father Marquette speaks as follows: "Among the rocks I have mentioned, we found one very high and steep, and saw two monsters painted upon it, which are so hideous that we were frightened at first sight, and the boldest savages dare not fix their eyes upon them. They are drawn as big as a calf, with two horns like a wild-goat. Their looks are terrible, though their face has something of human figure in it. Their eyes are red, their beard is like that of a tiger, and their body is covered with scales. Their tail is so long that it goes over their heads, and then turns between their fore-legs under the belly, ending like a fish-tail. There are but three colours, viz. red, green, and black; but those monsters are so well drawn that I cannot believe the savages did it; and the rock whereon they are painted is so steep that it is a wonder to me how it was possible to draw those figures: but to know to what purpose they were made is as great a mystery. Whatever it be, our best painters would hardly do better.

"As we fell down the river, following the gentle stream of the waters, and discoursing upon those monsters, we heard a great noise of waters, and saw several small pieces of timber, and small floating islands, which were huddled down the river *Pekitanoni.* The waters of this stream (the Missouri) are so muddy, because of the violence of its stream, that it is impossible to drink of it; and they spoil the clearness of the Mississippi, and make its navigation very dangerous in this place. This river runs from the north-west; and I hope to discover, in following its channel to its source, some other river that discharges itself into the *Mar Marvejo*, or the *Caliphornian Gulf.*

"About twenty leagues lower than the Pekitanoni, we met another river, called the Ouabouskigon; but before we arrived there, we passed through a most formidable place to the savages, who believe that a *manito* or devil resides in that place, to deliver such as are so bold as to come near it. This terrible *manito* proves to be nothing but some rocks in a turning of a river, about thirty feet high, against which the stream runs with great violence." This is probably the Grand Tower. "The river *Ouabouskigon* (Ohio) comes from the eastward. The *Chiaoanous* (Shawneese) inhabit its banks; and are so numerous, that I have been informed there are thirty-eight villages of that nation situated on this river."

NOTE [8]. Page 50.

A *township* is a square, whose sides (limited by true meridians and parallels to the equator) are each 6 miles in length: area 36 square miles, or *sections*, each containing 640 acres. Each township contains 23,040 acres. A *quarter-section* is a square whose sides (bounded by meridians and parallels), are each half a mile, and contain 160 acres. The corners of each section are distinctly marked by the United States' deputy-surveyors. The *sections* are numbered from 1 to 36, beginning at the N. E. corner of the township, and going from right to left, to the N. W. corner; and then returning from left to right to the east boundary of the township, and so on.

The act of February 22. 1817, authorizes the sale, in *half quarter* sections, (or 80 acres) of the sections 2, 5, 20, 23, 30, 33, of each township. The subdivision of the quarter section is made by true meridians.

The *section* No. 16. in every township, is by law reserved for the support of schools; the S. E. corner of that section is the centre of each township. More than 60 million acres of United States' land, have already been surveyed:—$\frac{1}{36}$ of 60 millions is 1,666,666 acres, reserved by law for the support of schools. The section No. 16. will unquestionably be reserved in all future surveys and disposals of public lands.

For colleges and seminaries of a higher grade, thirteen whole townships have already been granted by the United States to Michigan, Ohio, Indiana, &c. Thirteen townships are equal to 299,520 acres.

By section 2. of the act of April 18. 1806, relative to Tennessee, 200,000 acres are in that state reserved for colleges and academies.

The reservations for schools, colleges, &c. are—

Section No. 16. - - -	1,666,666
Thirteen townships - -	299,520
Reservation in Tennessee - -	200,000
	2,166,186 acres;

which, at the minimum price established previous to the year 1820, of two dollars per acre, is $4,332,372.

The area of the whole state of Ohio (the eldest of the states north of the Ohio) is about 25 millions of acres; of this about 14,400,000 had been surveyed anterior to the late cessions, which embrace the N. W. part of that state: $\frac{1}{36}$ of 14,400,000 is 400,000,

The free spirit of Ohio, united with signal industry and economy, has already given to section 16. in the surveyed portion of the state, a value of at least four dollars per acre, or of 1,600,000 dollars. There are instances, in which section 16. in Ohio, is worth from twenty to thirty dollars per acre.—*National Intelligencer of November* 10. 1819.

NOTE [9]. Page 50.

Genus Mus. L.—*M. Floridanus, Ord, Say. Body* robust; *back* plumbeous; sides, sacrum, and origin of the tail, ferrugineous-yellowish; *fur* plumbeous near its base; all beneath white; *tail* hairy, above brown, as long as the body; *head* plumbeous, intermixed with gray, gradually attenuated to the nose; *ears* large, prominent, patulous, obtusely rounded, naked or furnished with obsolete sparse hairs behind, and on the margin within; *eyes* moderately prominent; *whiskers,* some black, and some white bristles, elongated, longest surpassing the tips of the ears, arranged in six longitudinal series, superior labia, and those of the angles of the mouth, folded into the mouth, and hairy within; *legs* subequal, robust; anterior legs with a few white projecting setæ near the foot behind; *feet* white; *toes* annulate beneath, with impressed lines, intermediate ones equal, exterior ones equal; shorter thumb minute; *palm* with five tuberculous prominences, of which the anterior ones are placed triangularly, and the others transversely; *nails* concealed by the hairs; *posterior feet,* inner toe shortest, 2d, 3d, and 4th subequal, the third slightly longest, all beneath annulated; *nails* concealed by the hairs; *palm* with six tubercles, of which the three posterior ones are distant from each other. Entire length, from nose to tip of tail, sixteen inches nearly; *tail* seven inches, *ear* rather more than $\frac{9}{10}$ of an inch long, greatest breadth one inch. From tip of nose to anterior canthus of the eye, $1\frac{1}{20}$ inches. Length of the eye nearly $\frac{2}{5}$.

NOTE [10]. Page 55.

What we have called *base* in the following statement is in reality the length of a line passing over the top of the mound, from the termination of the base each side.

The numbers refer to a draft. The heights are estimated, with the exception of two.

No. 2. A square with a hollow way, gradually sloping to the top; or, in other words, a hollow square open behind.

Base	50 feet.
Height	5
Distance N. from the Spanish bastion	259

No. 3. An oblong square.

Longitudinal base	114
Transverse do.	50
Length at top	80
Perpendicular height	4
Distance from No. 2. N.	115

No. 4. An oblong square.

Longitudinal base	84
top	45
Perpendicular height	4
Distance N.	251

Nos. 2. 3. and 4. are each about 33 ordinary steps from the edge of the second bank of the river.

No. 5. An oblong square.

Longitudinal base	81 feet.
top	35
Perpendicular height	4
Distance W.	155

No. 6. Different in form from the others. It is called the *Falling Garden*, and consists of three stages, all of equal length, and of the same parallelogramic form: the superior stage, like the five succeeding mounds, is bounded on the east by the edge of the second bank of the river: the second and third stages are in succession on the declivity of the bank, each being horizontal; and are connected with each other, and with the first, by an abruptly oblique descent.

Longitudinal base	114 feet.
top	88
Transverse base of first stage	30
height of do.	5
Declivity to the second stage	34
Transverse surface of do.	51
Declivity to the third stage	30
Transverse surface of do.	87
Declivity to the natural slope	19

No. 7. Like the three succeeding ones, conical.

Distance northward	95 feet.
Base	83
Top	34
Height	4½

No. 8.

Distance about N.	94
Base	98
Top	31
Height	5

No. 9.

Distance about N.	70
Base	114
Top	56
Height	16

No. 10.

Distance about N.	74
Base	91
Top	34
Height	8 or 10

No. 11. Nearly square, with a large area on the top (a brick house is erected at the S.W. corner). The eastern side appears to range with the preceding mounds.

Distance	158 feet.
Base	179
Top	107
Height W. side, say	5
S.	11
E.	15 or 20

No. 12. Nearly square, westerly a little N. from No. 7. and distant from it - - - 30 feet.

Base	129
Top	50
Height	10

No. 13. A parallelogram, placed transversely with respect to the group.

Distance	30 feet.
Distance from No. 5. N. 10 W.	350
Longitudinal base	214
top	134
Transverse base	188
top	97
Height	12

No. 14.

A convex mound, W.	55
Base	95
Height	5 or 6

No. 15. Together with the three succeeding ones, more or less square.
Distance N.W. - - 147 feet.
Base - - - - 70
Height - - - 4

No. 16. Distance N. 10 E. - - 103
Base - - - 124

No. 17. Distance N. - - - 78
Base - - . 82

No. 18. Distance, N.N.E. - - 118
Base - - - 77

The mounds from 14. to 18. inclusive, are so arranged as to describe a curve, which, when continued, terminates at the larger mounds, Nos. 15. and 19.

No. 19. A large quadrangular mound, placed transversely, and with No. 13., ranging in a line nearly parallel to the principal series (from 2. to 11.)
Distance N.N.W. from No. 13. - 484 feet.
E.N.E. 18. - 70
Base - - - - 187
Top - - - 68
(By measurement) Height - - 23

No. 20. A small barrow, perhaps two feet high, and of proportionably rather large base, say 15 or 20 feet.

No. 21. A mound similar to the preceding, same height. West of No. 16., base 25 feet.

No. 22. Quadrangular.
Distance West from No. 16. - - 319 feet.
Base - - - - 73

No. 23. A mound of considerable regularity; but, owing to the thickness of the bushes, we cannot at present satisfy ourselves of its being artificial, though from its corresponding with No. 25., we suppose it to be so.

No. 24. Appears to be an irregular mound 10 or 12 feet high, and 145 feet base.

No. 25. Distant N. 10 E. 114 feet; and following this course 132 feet, we arrive at an elevation on its margin, as is also the case with No. 24., and which we have numbered 26.

No. 26. Of which the base is 89 feet, and height 10 or 12. — It is distant W.N.W. from No. 26., 538 feet.

No. 27. Is the largest mound, of an elongated-oval form, with a large step on the eastern side.

Distance N. from No. 26.	1463 feet.
Longitudinal base	319
top	136
Transverse base	158
top	11
Step transversely	79
Height by measurement	34

At the distance of a mile to the westward, is said to be another large mound.

NOTE [11]. Page 62.

In a section of forty feet perpendicular, of the alluvion of the Mississippi, near New Madrid, Mr. Shultz found seven hundred and ninety-eight layers, indicating an equal number of inundations, in the time of their deposition. Supposing these inundations to have happened yearly, we have an easy method of forming an estimate of the rapidity of the elevation of the bed of the Mississippi. These layers were found to vary in thickness, from one-fourth of an inch to three inches. See Shultz's *Travels*, vol. ii. p. 90.

NOTE [12]. Page 65.

The vegetable productions at this place were, the populus deltoides, occupying the narrow margin of the river (not here preceded by the salix angustata, as is generally the case in recent alluvial grounds on the Ohio and Mississippi); the amorpha fruticosa*, and platanus occidentalis, next follow. The margin of the bluff produces the quercus rubra, juglans pubescens, carpinus Americana, (around the latter, we observed the celastrus scandens entwined and in fruit,) and on higher grounds, the laurus sassafras and juniperus Virginianus. Of herbaceous plants, the only one in flower was the rudbeckia fulgida. The higher parts of the hills were in many places thickly covered with species of elymus and andropogon, the summits being usually quite naked, and consisting of horizontal masses of ferruginous coloured sandstone. *Baldwin.*

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* This beautiful flowering shrub occupies the low lands of Georgia, on the sea coast, but is not confined to the margin of rivers, as appears to be the case on the Missouri.

Note [13]. Page 78.

From Bay Charles Hill, four miles below Hannibal, Missouri, we received, through Dr. Sommerville, several organic remains. Among them are the following:—

Carbonate of Lime.

One specimen contains exclusive quantities of segments of the encrinite of small diameter, from one-fourth of an inch down to minute.

Another specimen also, with numerous small encrinites, has a very wide and short radiated productus.

Another specimen, a grayish chert, containing cavities formed by the solution and disappearance of encrinites. The parts of these which were originally hollow when in the state of carbonate of lime, being subsequently filled with chert, now show the nature of the fossil, being cylindrical cavities, with a solid centre and transverse partitions, the largest three-tenths of an inch wide.

From Rector's-hill, adjoining the village of Clarksville, Missouri, from Dr. Sommerville's collection:—

A specimen of oolite — carbonate of lime.

It is composed of small spherical granules in contact with each other, which, in their fracture, exhibit rather a concentric tendency, with the appearance of a central nucleus; but we could not perceive any decided evidences of former organization in them. Imbedded in the mass are a few columnar segments of encrinites, and a portion of a compressed bivalve, which, in the form of its radiating lines, resembles a pecten.

From Charbonière:—

A specimen in argillaceous sandstone of a portion of a leaf like the nelumbium. It is only the middle portion of the impression of the leaf that remains, being of an oval form of about five inches in greatest diameter, the rest being broken away; the stalk has been broken off at the junction of the leaf.

Productus spinosus. Say.

A small species of terebratula, in width two-fifths, and in length more than seven-tenths of an inch — an internal cast — individuals very numerous, varying much in size, the smallest being about one-fifth of an inch wide.

From the Mammelles near St. Charles:—

Productus: a portion of a valve, and smaller portion of the opposite valve of a remarkably large species, of which the proportions may have been not dissimilar to that of the Ency. Meth. pl. 244. fig. 5. The striæ are similar to those of that shell, except in being somewhat smaller; and the groove of one valve, and consequent elevation of the other, not so profound, less abrupt, and more angular in the middle, and far less prominent on the edge of the shell. It may justly be named *grandis*, as its hinge width was more than 3½ inches.

NOTE [14]. Page 83.

In compact limestone, which had been subjected to the action of fire, we observed segments of encrinites becoming easily detached. They were three-fifths of an inch in diameter, varying to the size of fine sand. At Boonsville we found a small ostrea and a terebratula, in carbonate of lime.

NOTE [15]. Page 87.

In a letter addressed to Mr. Frazer, an extract from which was published in the tenth volume of the London Journal of Literature and the Arts, Dr. Baldwin mentions having discovered near Monte Video, in South America, the *Solanum Tuberosum* in its native locality. Mr. Lambert, however, considered this plant as the *Solanum Commersoni* of Dunal; and though it produces tuberous roots, and in other respects makes a near approach to S. tuberosum, he was not satisfied of their identity, and remarks that is yet to be proved, that this is the stock from which the common potatoe has been derived. It appears, however, that the original locality of the solanum tuberosum has been ascertained by Ruiz and Pavon, after having escaped the observation of Humboldt and Bonpland.

NOTE [16]. Page 88.

Above Cote Sans Dessein, we saw frequently the Juglans nigra, and J. pubescens, called white hickory; also a species of Cratægus, which, though sometimes seen in Pennsylvania, appears to be hitherto undescribed. Its fruit is large, yellow when ripe, and of an agreeable flavour. On the evening of the 11th we anchored opposite a steep bank, which I was assisted to climb; but night came on, and put an end to our herborizations before I had the opportunity to collect any thing interesting. The soil here is a dark vegetable mould, at least five feet in depth, and little intermixed with sand. I ascended the same bank on the following morning, but found nothing except a species of Carex that I do not recollect to have seen before.

After getting under weigh, we passed high calcareous bluffs on the left side of the river, covered with timber, and reminding us of the deep umbrageous forests within the tropics.

Franklin, July 15th. Portulacca sativa, Solanum nigrum, Urticapumila, Datura strammonium, and Phytolacca decandra, occur by the road side. Blackberries were now ripe, but not well-flavoured. Campanula Americana, the large Vernonia mentioned at Cote Sans Dessein, now flowering.

Some plants were brought in, among which we distinguished the Monarda fistulosa, Achillea millefolia, Cacalia atriplicifolia, called "horse-mint," Queria canadensis, Menispermum lyoni, Verbena urticifolia. The Annona triloba is frequent about Franklin; also the Laurus benzoin, and the Symphoria now in flower, the Rhus glabrum, Cercis canadensis, Ampelousis quinquefolia, Eupatorium purpureum, in flower. Cucubalus stellatus, still flowering. The Prickly-fruited Æsculus has nearly ripened its nut, Zanthoxylon clava herculis, in fruit, a "wild gourd" not in flower.

July 26th. The Gleditschia is a small tree here; Geum album, Myosotis virginiana, Amaranthus hybridus, Erigeron canadense, Solanum caroliniaunm, very luxuriant and still flowering. The leaf of the Tilia glabra I found to measure thirteen inches in length, and eleven in breadth. Bignonia radicans, Dioscorea villosa, a Helianthus with a leaf margined with spines, the narrow-leaved Brachystemum, the Lyatris pycnostachia, Rudbeckia purpurea, and various others in flower. Juglans porcina and cinerea, Ostrya virginica, Rhus copallinum. —— August 4th. Dr. Lowry informed me he has seen Pyrus coronaria, forty feet in height, in the forests about Franklin. He showed me a Rudbeckia about three feet high with a cone of dark purple flowers, probably a new species.

5th. Eupatorium hieracifolium beginning to flower; Menispermum canadense, here called "sarsaparilla," its slender yellow roots being substituted for that article.

6th. A Mimulus is found here resembling M. ringens, but the leaves are not sessile; peduncle very short; flowers large, pink-coloured, stem acutely quadrangular; Campanula Americana, three and a half feet high.

NOTE [17]. Page 96.

A variety of this species, the Cervus Virginianus, three specimens of which occurred at Engineer cantonment, had all the feet white near the hoofs, and extending to them on the hind part from a little above the spurious hoofs. This white extremity was divided upon the sides of the foot by the general colour of the leg, which extended down near to the hoof, leaving a white triangle in front, of which the point was elevated rather higher than the spurious hoofs. The black mark upon the lower lip, rather behind the middle of the sides, was strongly noted—

	ft.	in
Total length, exclusive of hair, at tip of tail -	5	$4\frac{3}{4}$
Ear, from the upper part of the head - -	0	$6\frac{1}{2}$
Tail, from lateral base, exclusive of the hair -	0	$9\frac{1}{2}$
Hind foot, from tip of os calcus to tip of toe -	1	$6\frac{1}{4}$
Fore arm - - - - -	1	$11\frac{7}{8}$

Weight, in February, 115lbs.

This species, common as it is, was never figured, nor indeed very well described, until the year 1819, when it appeared in the valuable work of Messrs. Geoffroy and F. Cuvier (Hist. Nat. des Mammiferes, 2d liv.) Its highest northern range is Canada, in North America; and it is found as far south as the river Oronoco, in South America.

This species is leanest in February and March, and in best condition in October and November. The rutting season commences in November, and continues about one month, ceasing generally about the middle of December. During this season the neck of the male becomes much dilated.

The fawn, towards autumn, loses its spots; and the hair becomes grayish, and lengthens in the winter. In this state the deer is said by the hunters to be *in the gray.* This coat is shed in the latter part of May and beginning of June, and is then substituted by the reddish coat. In this state the animal is said to be *in the red.* Towards the last of August the old bucks begin to change to the dark bluish colour; the doe commences this change a week or two later. In this state they are said to be *in the blue.* This coat gradually lengthens until it comes again to the *gray.* The skin is said to be toughest in the *red,* thickest in the *blue,* and thinnest in the *gray.* The blue skin is most valuable.

The horns are cast in January. They lose the velvet the last of September and beginning of October. About the middle of March, Mr. Peale shot a large doe, in the matrix of which were three perfectly formed young, of the size of a rabbit.

NOTE [18]. Page 99.

From Fort Osage.

Productus spinosus, SAY. — Longitudinally and transversely subequally striated, the tranverse striæ somewhat larger than the others; a few remote short spines, or acute tubercles, on the surface, arising from the longitudinal striæ.

Breadth an inch and a half; the striæ are somewhat indistinct — as in No. 5.

Productus incurvus, SAY. — Shell much compressed; hinge margin nearly rectilinear; surface of the valves longitudinally striated; convex valve longitudinally indented in the middle; the beak prominent and incurved at tip; opposite valve with a longitudinal prominence in the middle; the beak incurved into the hinge beneath the other beak, and distant from it.

Width more than 2⅔ inches. A few univalves also occurred, but they were so extremely imperfect that their genera could not be made out.

A dark-coloured carbonate of lime, containing small Terebratulæ like the T. ovata of Sowerby, but less than half as long.

No. 1. a mass of carbonate of lime, containing segments of encrinites in small ossicula.

6. A Caryophylla of a single star, about four inches long, of an irregularly transversely undulated surface, imperfect at each end, but seems to have been attached at base. Near the base it is bent at an angle of about 45 degrees.

Some small and young specimens of the Terebratula, like T. subundata of Sowerby.

Miliolites centralis. SAY.

12. Astrea. A species of very minute alveoles. From the state of the petrifaction no radii are perceptible, so that the genus is not determinable.

Saltworks near Arrow Rock. Columnar segments of the Encrinus.

Inferior portion of the head of A. Pentramea. SAY.

Segments of the column of an oval encrinus, much narrower in the middle than the oval vertebra of an encrinite represented by Parkinson, Vol. 2. pl. 13. f. 40. — resembling those of the genus *Platycrinites* of Miller.

NOTE [19]. Page 107.

Sciurus macroura. SAY. — *Body* above each side, mixed gray and black; fur plumbeous, black at base, then pale cinnamon, then black, then cinereous, with a long black tip: *ears* bright ferruginous behind, the colour extending to the base of the fur, which, in its winter dress, is prominent beyond the edge; within dull ferruginous, the fur slightly tipped with black; *side of the head and orbits* pale ferruginous, cheek under the eye and ear dusky; *whiskers* black, in about five series, of which the four inferior ones are more distinct, hairs a little flattened; *mouth* margined with black; *teeth* reddish yellow; *head* beneath, *neck* and *feet* above pale ferruginous; *belly* paler; fur pale plumbeous at base; *palms* black; *toes*, anterior ones four, the thumb tubercle not longer than its lobe in the palm, and furnished with a broad flat nail; posterior toes five; *tail* beneath bright ferruginous, the colour extending to the base of the fur, with a submarginal black line; above mixed ferruginous and black; fur within pale cinnamon, with the base and three bands black; tip ferruginous.

From nose to tip of tail (exclusive of the hair) 1 foot $7\frac{1}{4}$ inches.
Tail, from base to tip ditto - $9\frac{1}{10}$
Ear, from head to tip - - $0\frac{3}{4}$

The most common species of squirrel on the banks of the Missouri river. It is allied to *S. cinereus*, but cannot be considered as a variety of that species; neither does it approach any of the numerous varieties of the very variable *S. capistratus* of Bosc.

The fur of the back in the summer dress is from $\frac{3}{5}$ to $\frac{7}{10}$ of an inch long; but in the winter dress the longest hairs of the middle of the back are one inch and $\frac{3}{4}$ in length. This difference in the length of the hairs, combined with a greater portion of fat, gives to the whole animal a thicker and shorter appearance; but the colours continue the same, and it is only in this latter season that the ears are fringed, which is the necessary consequence of the elongation of the hair. This species was not an unfrequent article of food at our frugal yet social meals at Engineer Cantonment, and we could always immediately distinguish the bones from those of other animals, by their remarkably red colour.

The tail is even more voluminous than that of the *S. cinereus*.

It seems to approach the *Sc. rufiventer*. *Geoff.* v. Dict. D. Hist. Nat. article Ecu. p. 104.

NOTE [20]. Page 131.

The guilandina dioica of Linn., Marshall, &c. but referred by Michaux to the new genus gymnocladus, of which it is the only well ascertained species. It is common throughout the western states, and territories, and in Canada, where it is called by the French chicot, or stump tree, from the nakedness of its appearance in winter. In the English gardens, where it has been cultivated many years under the name of the hardy bonduc, it has attained considerable magnitude, but has not hitherto been known to produce flowers.

NOTE [21]. Page 131.

Fringilla grammaca, SAY. — Above blackish-brown; *head* lineated; beneath white, a black line from the inferior base of the inferior mandible, above this a dilated white line; from the angle of the mouth proceeds a black line, which is much dilated and ferruginous behind the eye, and terminates in a contracted black line; a black line from the eye to the superior mandible, enclosed, as well as the eye, by a dilated white line, which is more contracted behind the eye; top of the head with two dilated lines, which are black on the front and ferruginous on the crown and hind head, and separated from each other by a cinereous line; interscapulars and lesser wing coverts margined with dull cinereous or brownish; *wings* dusky brown, a white spot on the outer webs of the second, third, and fourth primaries, near their bases; *back* dirty olive-brown; *tail* rounded; *tail feathers* twelve, blackish-brown, two intermediate ones immaculate, adjoining ones with a small white spot at tip, which, on the lateral ones, increases in size until on the exterior one it occupies half of the total length of the feather; the exterior web of the outer feather is white to its base; *chin* and *throat* white; *neck* and *breast* dull cinereous; *abdomen* and *vent* white; *feet* pale, tinged with orange; nail of the middle toe slightly dilated on the inner side.

Length six and a quarter inches.

Shot at Belle Fontain on the Missouri. Many specimens were obtained. The auriculars of the female are yellowish-brown. They run upon the ground like a lark, seldom fly into a tree, and sing sweetly. They were subsequently observed at Engineer Cantonment.

NOTE [22]. Page 131.

Coluber obsoletus, SAY.—*Body* black above, beneath whitish, with large subquadrate black spots, which are confluent, and pale bluish towards the tail; *throat* and *neck* pure white; *sides* between the scales with red marks.

Description. *Body* black, *anterior half* with a series of continuous, dilated dull-red large circles, formed upon the skin between the scales, on the side; on many of the scales, are white marginal dashes near their bases: these scales are placed in groups each side of the vertebræ of the anterior moiety of the body; *scales* bipunctured at tip; *beneath* flat, so as to produce an angle or carnia each side; white slightly tinged with yellowish red, irrorate with black points, and spotted with large oblong quadrate marks, which gradually become more continuous, confluent and plumbeous towards the tail, occupying nearly the whole surface; *head* beneath and *throat* pure white; posterior *canthus* of the eye two-scaled; *iris* blackish; *pupil* deep-blued black, enclosed by a silvery line.

One specimen, Pl. 228—Sc. 67?
Another do. do. 233—do. 84
Another do. do. 228—do. 84
Total length—4 feet 11$\frac{5}{8}$ inches.
Tail do. do. 10$\frac{1}{8}$ do.

The lateral red marks are not perceptible, unless the skin be dilated so as to separate the scales; and the small white marginal lines on the bases of some of the scales are observable only on close inspection. It varies in being nearly or quite destitute of spots on the anterior portion of the body beneath, but the posterior half of the inferior surface still remains blackish. The whole animal bears strong resemblance to C. *constrictor*; but the scales are decidedly smaller, and the number of its plates and scales approach it still more closely to that uncertain species C. *ovivorus*. It is not an uncommon species on the Missouri from the vicinity of Isle au Vache to Council Bluff.

Penis terminated by a hemisphere, covered with compressed, white spines, which are reflected at tip; the series interrupted on the posterior side of the member by a canal; *it* is much dilated, dark reddish brown, abruptly contracted at base from the exterior side, and with a prominent tubercle on the middle of the inner side: length one inch and a quarter, width about seven-sixteenths of an inch.

Note [23]. Page 133.

This velocity of current is equalled by that of the Cassiquiare in South America, and probably surpassed by the Oronoko, the average descent of whose bed is thirteen inches to the mile of 950 toises (6 feet 4.376 inches per toise). See Humb. Pers. Nar. vol. v. p. 637, and vol. iv. p. 452. La Condamine and Major Rennel suppose the mean descent of the Amazon and the Ganges, scarce four or five inches to the mile, which is about equal to that of the Mississippi, according to the most satisfactory estimates we have been able to make.

Note [24]. Page 138.

We add some notices of a few of the most important.

1. *Terebratula.* — A specimen considerably resembling the T. *subundata* of Sowerby, in the undulated line of the edges of the valves; but it is a much more depressed shell, and of a much less rounded form.

In the young state, the undulation of the edge is not very distinct; but this character increases with age, so that in the young state, it appears like a totally different species from the adult.

2. In the same rock are very numerous arquated spines, like ribs of fish, some of them 1½ inches long.

3. A fragment of a terebratula or productus, imbedded, with very long spines, which may possibly be the same with the above.

4. A specimen, being a mass of comminuted fragments of shells, amongst which are only recognizable a few segments of the column of the encrinus, and minute turretted univalves of five whirls, which resemble turritella, and are about one-twentieth of an inch long.

5. *Millepora cylindrica*, Say. — Branched, cylindric; *pores* very regular, alternate, oval, placed nearer to each other than the length of their own transverse diameters, and resembling those of an *alveolite.*

Diameter, about one-tenth of an inch.

6. Segments of the column of encrinus of authors, of a pentangular form.

7. Ossiculæ of the body of a crinoid animal of the analogous species to No. 21.

8. Fragment of Perna?

9. A mass of argillaceous sandstone, containing spines of a

Linnæan echinus, belonging probably to the genus cidarites of Lamarck. Of these spines some are elongate-conic, others slightly fusiform, obtuse and slightly dilated near the tip, both are armed with short asperities throughout their length. They resemble in some degree those of the *cidarites pistillaris* of Lamarck, but they are smaller, less fusiform, and the asperities are not prominent.

In the same mass are segments of encrinus, and fragments of the retepore.

10. Retepore, much resembling the *milleporites flustriformis* of Martin, Petrif. Derbi. pl. 43. fig. 1 and 2., but the alveoles in our specimens are rather smaller.

14. *Millepora cylindrica*, Say. — Of the diameter of half an inch.

12. *Productus subserratus*, Say. — Shell transverse, convex valve semicircular, destitute of asperities or striæ, longitudinally indented in the middle; line of the hinge rectilinear, half as long again as the length of the shell, with three or four spines or serratures on each side towards the angle; *umbo* not prominent; the beak hardly prominent beyond the line of the hinge. Length, more than three-tenths; breadth, more than half an inch. A large specimen was four-fifths of an inch wide.

If we except the beak, the outline of this shell, as respects the hinge margin and the sides, considerably resembles that of P. *spinulosus* of Sowerby, but the base is far more obtusely rounded, and it is a shorter shell comparatively with its width. The serratures are very often broken off. The curvature of the sides does not in the slightest degree project beyond the angles of the hinge line.

13. An imperfect cast, very like the *terebratula subundata* of Sowerby, and of equal magnitude.

14. Pentagonal ossiculæ of the trunk of encrinus of authors, which in outline may be compared to figs. 61 and 62, of plate 13. vol. 2. of Parkinson's Organic Remains, but their surfaces do not now exhibit any sculpture.

Many of these shells exhibit the most unequivocal evidences of having been in a plastic state, at some period or other, since their deposition in their present situations. The fine striæ of a *productus lineolatus*, are so interlaced on the middle of a valve of one of our specimens, as at once to convince every observer of the shell having been thus partially dissolved, and when in this state to have been gently rubbed by some other body, in two directions proceeding obliquely to the same point, so as to throw the striæ in that part entirely out of their proper longitudinal direction. It is very common to find shells unnaturally flattened, or compressed in various ways and degrees, often without any fracture in the shell or cast; a circumstance which certainly could never happen to the shell, unless it was in a plastic state, or in a state of partial solution.

16. A specimen of carbonate of lime, on its surface a mass of sub-parallel tubes, connected by short lateral processes. The whole much resembles, and is probably congeneric with the erismatholithus tubiporites (*catenatus*) of Martin's Petrif. Derbi. t. 42. fig. 2., but the connecting processes of the tubes are much shorter than they are represented in that figure; but it corresponds much more exactly with the tubiperite, figured by Parkinson in his Organic Remains, vol. 2. pl. 1. f. 1., and may with great propriety form a new genus, the type of which will be the tubipora strues of Lin.

The genus is probably allied to favosites and tubipora.

17. *Trilobus.* — The abdomen of a species of this singular genus frequently occurs in the sandstone of the Missouri; near Engineer Cantonment they were very common. The largest was rather more than one inch long, by about one and three-tenths inches in breadth at base; but the more general length is about three-fourths of an inch. The tergum or intermediate lobe is narrow, being not more than two-thirds of the width of the flanks, and much more convex than those parts.

But a single specimen occurred, which we can, without any doubt, consider as the thorax of a trilobus; but whether or not it appertains to the same species with the above, or to some other of which we have no other fragment, we are at a loss to determine. Like the above-mentioned abdomen, it is distinct from any that we have seen figures of. It is of a narrow lunate form, highly convex, the disk destitute of sculpture, and the eyes prominent.

18. Many imperfect casts of two different kinds of bivalve shells occur near Engineer Cantonment, of which one may possibly have been a *cardita.*

19. Tooth of a squalus, which seems to approach nearest to those of *Sq. maximus*, by its compressed conic form.

Greatest length $2\frac{1}{10}$ inches.

Thickness more than $\frac{2}{5}$ of an inch.

The sides are rounded, without any appearance of serratures; thickened near the tip, and more compressed near the base.

20. Tooth of a squalus, something like that of S. *galeus*, but less of a triangular form, and the lateral processes are more distinct, and also less triangular than in that species.

21. An imperfect body of a crinoid animal, *encrinite* of authors; the fragment is about one-half of the inferior portion of the body, from which the following description is made out, taking into view the whole circumference. The plates composing the *first costal* series (Miller), five in number, are, longitudinally pentangular, much curved inwards towards the base, to join the *first columnar joint*, or perhaps the *pelvis;* at which part the plate is narrow, being about one-ninth of an inch, whilst the other sides are nearly three-tenths of an inch each, the superior ones being somewhat longer than the others; the *second costal plates*, (Miller,) five in number, are transversely pentangular, the superior joint being long, the lateral ones shortest, the former being one-half an inch in length, the latter $\frac{3}{20}$, and the inferior sides which articulate to the segments of the pelvis, somewhat less than $\frac{3}{10}$ of an inch; the margins of the first costal joints, as well as the superior margins of the segments of the pelvis, are armed with a few tubercles, some of which seem to have been perforated; all the superior pieces are wanting in our specimen, but the truncated surface, on which the *scapulars* (Miller) rested, is of a pentagonal outline, and composed of a series of horizontal equilateral triangles, two to each side, which are separated on each side from the adjacent pairs by a deep grove, which corresponds, and is nearly at right angles with the exterior sutures, which join the first costal joints to each other; these triangular surfaces are also separated from the exterior edge by two grooves, which are crenated, and enclose an oblong foramina between them; a single *intercostal plate* occurs, interposed between two of the *second costals;* it is of an oblong hexagonal form, its base resting upon the extremity of a segment of the *first costals*, which is truncated to receive it; the superior portion of this plate is much bent inward towards the abdominal cavity; its tip is quadrate and concave.

The whole exterior surface of this reliquium, with the exception of the tubercles, and sutural impressed lines, is plain and equable.

If we have not mistaken the pieces of this imperfect specimen, the pelvis is wanting, but the cavity in which it existed must have been about $\frac{3}{20}$ of an inch in diameter.

The plate-like form of the ossiculæ, and their mode of articulation with each other, by an extension horizontally inwards, as we have described above, in the case of those plates which we have considered as the *second costals*, seem to indicate, that this species ought to be referred to the second division of the crinoidea, or *semiarticulata* of Miller. It certainly, however, cannot be at all referred to poteriocrinites, the only genus which that author has framed in this division of the family. We refrain from distinguishing it by a name either generic or specific, until other specimens can be obtained, in which the characters are less equivocal.

We have two *second costal plates*, which made part of distinct individuals, larger than the above described one. Of these the surface of one is perfectly glabrous, whilst that of the other has light orbicular indentations instead of tubercles; a third very small one is perfectly smooth like the first, and doubtless formed part of the body of a young individual.

Another plate found near the same spot with the above, is of a somewhat triangular form exteriorly, or rather like the face of a truncated pyramid, of which the middle of the summit is a little produced in the form of a right angle, thus offering a scollop on each side of the apex for the adaptation of superior ossiculæ. On divesting it carefully of its extraneous matrix, we discovered that it was readily adjusted by its base to the summit of those segments of the fragment above described, which we have supposed to be *second costals*, a prominent line on its base corresponding with the inner one of those grooves which we have described, to characterize the superior face of those plates. This plate, then, agreeably to the relations in which we have viewed the preceding pieces, must be a *scapula*; it is susceptible of considerable hinge-like motion, and appears to have been much less firmly attached to the costals than the latter are to each other.

A segment of a crinoid animal, which seems to have been a *first costal joint* of a *pentacrinus* of Parkinson, occurred near the same place.

22. *Productus pectinoides*, SAY. — Convex valve, with a central longitudinal indentation; the whole surface is longitudinally ribbed, each rib being marked by two striæ, in addition to the central carina.

The shell is not of frequent occurrence, and a perfect specimen has not yet been obtained, but the portions we have examined, are sufficient to show that it is perfectly distinct from either of the species we have mentioned. We do not find any species figured or described by authors like it.

23. *Productus compressus*, Say. — Shell much compressed, with numerous acute striæ, upwards of fifty in number on each valve, the alternate ones rather smaller; a very slight central longitudinal indentation on the convex valve; outline suborbicular; hinge edge rectilinear, shorter than the greatest breadth of the shell.

Greatest breadth from $\frac{3}{5}$ to 1 inch. In its proportions it resembles the truncated portion of the productus of Martin, as represented on his plate 22. fig. 3. It is very common.

24. A shell of the length and breadth of three inches sometimes occurs, the convex valve of which is transversely undulated, its umbo prominent, and curved like that of a gryphæa, its tip resting on the base of the opposite valve, which is concave, with a transverse linear base; its muscular impressions seem to have been lateral.

25. A single specimen was found of a valve of a shell, in some degree resembling a pecten, but without the auricles. Length more than $2\frac{3}{10}$ inches.

26. *Productus lineolatus*, Say. —Valves with numerous, fine, equal, equidistant, longitudinal striæ, and a few small tubercles; convex valve very much elongated, its basal portion is curved downwards, almost perpendicularly with respect to the disk near the umbones.

So singular is the structure of this shell, that the internal cavity appears to have been perfectly transverse, with respect to the general length of the shell, and small in comparison with the length. It strongly resembles the anomites productus of Martin, as represented on plate 22. fig. 102. of his Petrif. Derbi., and like that shell it is armed with small tubercles, though fewer in number, and the striæ are much more numerous and smaller.

27. Cast of a turretted univalve, probably a cerithium, of the length of $2\frac{1}{4}$ inches.

28. Cast of the anterior portion of a valve of a shell like an ostrea, of the breadth of $2\frac{1}{2}$ inches.

29. On the Missouri near the Platte, occur masses of rock, which seem to be almost exclusively composed of a remarkable petrifaction, belonging to the family of concamerated shells. This shell is elongated, fusiform, and when broken transversely, it exhibits the appearance of numerous cells disposed spirally as in the *nummulite*, but its longitudinal

section displays only deep grooves. The shell was therefore composed of tubes or syphons, placed parallel to each other, and revolving laterally, as in the genus *melonis* of Lamarck, with which its characters undoubtedly correspond. But as in the transverse fracture, its spiral system of tubes cannot be traced to the centre in any of the numerous specimens we have examined, it would seem to have a solid axis, and consequently belongs to that division of the genus that Montfort regards as distinct, under the name of *miliolites*, which seems to be similar to the *fasciolites* of Parkinson, and altogether different from the miliolites of Lamarck. Our specimens are conspicuously striated on the exterior, which distinction, together with their elongated fusiform shape, sufficiently distinguish them as a species from the *sabulosus* which Montfort describes as the type of his genus. No aperture is discoverable in this shell, but the termination of the exterior volution very much resembles an aperture as long as the shell.

The length is three-tenths of an inch; and its greatest breadth one-twelfth.

We call it *miliolites secalicus*, Say.— Mr. T. Nuttall informs me, that he observed it in great quantities high up the Missouri.

In the same mass were some segments of the encrinus, and a terebratula with five or six obtuse longitudinal waves.

30. Another petrifaction, abundant in some fragments of compact carbonate of lime, also found on the shores of the Missouri, possesses all the generic characters which we have attributed to the preceding species, excepting that in the transverse fracture the cells distinctly revolve from the centre itself, and of course the shell was destitute of the solid nucleus as in melonis, *Lamarck*. It has about four volutions. We have named this species, which is, notwithstanding the difference of the central portion of the same genus with the preceding *miliolites centralis*, *Say*. As in the preceding, it is entirely filled solidly with carbonate of lime, and this substance being of a greater purity in the filled-up cavities of the fossil than in the mass, its interior divisions are very obvious.

The latter species we observed about one hundred miles up the Konzas river, where it forms the chief body of the rocks in extensive ranges. It seems to be a carbonate of lime containing iron.

Note [25]. Page 150.

1. *Sorex parvus*, Say.—Brownish cinereous above; beneath cinereous; teeth blackish; tail short, of moderate thickness.

Body above brownish cinereous, beneath cinereous; *head* elongated; *eyes* and *ears* concealed; *whiskers* long, the longest nearly attaining the back of the head; *nose* naked emarginate; *front teeth* black, lateral ones piceous; *feet* whitish, five-toed; *nails* prominent, acute, white; *tail* short, subcylindric, of moderate thickness, slightly thicker in the middle, whitish beneath.

Length from tip of nose to root of tail, - - $2\frac{3}{8}$ inches.
of tail, - - - - - - $0\frac{3}{4}$ ——
from the upper teeth to tip of nose, - $0\frac{3}{20}$ ——

Mr. Peale caught this animal in a pitfall, which he had dug for the purpose of catching a wolf. It is a female.

Barton, in his Medical and Physical Journal for 1806, p. 67, says, that, "Sorex minutissimus of Zimmerman, has been discovered in the trans-Mississippi part of the United States, in the country that is watered by the Missouri;"—had he reference to this species?

This *sorex minutissimus*, is probably synonymous with S. *exilis*, to which our specimens cannot be referred, whilst the character attributed to that species, of "tail very thick in the middle," is considered essential.

2. *Sorex brevicaudus*, SAY.—Blackish-plumbeous above, beneath rather lighter; teeth, blackish; tail, short, robust.

Total length from nose to tip of tail, - - $4\frac{5}{8}$ inch.
of the tail, - - - - 1 ——
from the upper teeth to the tip of nose, $0\frac{1}{8}$ ——

Above blackish plumbeous, when viewed from before; silvery plumbeous when viewed from behind; *fur* dense, rather long; *beneath* rather paler; *head* large; *eyes* very minute; *ears* white, entirely concealed beneath the fur, aperture very large, with two distinct semisepta, (tragus and antitragus?) which are sparsely hairy at tip; *rostrum* short, with a slightly impressed, abbreviated line above; *nose* livid brown, emarginate; *mouth* margined with whitish and with sparse short hairs; *teeth* piceous black at tip; *feet*, white, the second, third, and fourth toes subequal, the first and fifth shorter, the former rather shortest, anterior with but very few hairs, nearly naked; *nails* nearly as long as the toes; *tail* with rather sparse hairs, nearly of equal diameter, but slightly thickest in the middle, depressed, and nearly as long as the posterior feet.

This specimen, which is a male, closely resembles S. *parvus*, but it is much larger; the head is proportionably much larger and more elongated; the tail more robust, and the inferior anterior pair of incisores are similar to those of S. *constrictus*, fig. 7. pl. 15. of the Mem. du Mus. by Mr. Geoffroy St. Hilaire. The incisors of the superior jaw are twelve in number, in a cranium belonging to this species, five on each side in addition the two larger anterior ones; the posterior tooth of the lateral ones is smallest.

May not this be the animal mentioned by the late professor Barton in his Medical and Physical Journal, for March, 1816, which, he says, "may be called the black shrew?" I do not know that the black shrew has ever received any further notice, unless it is the same species to which Mr. Ord has applied the name of *Sorex niger*.

NOTE [26]. Page 153.

1. *Vespertilio pruinosus.*—*Ears* large, short, not so long as the head, hairy on the exterior side more than half their length; *tragus* very obtuse at tip, arcuated; *canine teeth* large, prominent; *incisors*, only one distinct one on each side, placed very near the canine, conic, almost on a line with it, and furnished with a small tubercle on its exterior base; *nostrils* distant; *fur* of the back, long, black brown at base, then pale brownish-yellow, then blackish, then white; towards the rump dark ferruginous takes the place of the brownish-yellow on the fur; *beneath* the colours are similar to those of the back; but on the anterior portion of the breast the fur is not tipped with white, and on the throat it is dull yellowish-white dusky at base; the brachial membrane is densely hairy on the anterior margin beneath; interfemoral membrane covered with fur: length nearly 4½ inches.

This bat is common in this region, and was observed by Mr. Thomas Nuttall at Council Bluff. It is a fine large species, and remarkable for its many-coloured fur. It has much affinity with the New York bat, (V. novaboracensis,) but is more than double its size, and is distinguished from it by many minor characters.

The late professor Barton, presented a specimen of this bat to the Philadelphia museum, that had been captured in Philadelphia.

2. *Vespertilio arquatus.*—*Head* large; *ears* rather shorter than the head, wide, and at tip, rounded, hairy at base, posterior edge with two slight and very obtuse emarginations; the anterior base distant from the eye; *tragus* arquated, obtuse at tip; interfemoral membrane naked, including the tail to one half of the penultimate joint.

Total length 5 inches: tail 1½ inches.

Expansion more than 13 inches.

This bat might be readily mistaken for the Carolina bat, (V. carolinensis, Geoff.) which it resembles in colour, but differs from it in being of a larger size, the ears broader and proportionally shorter, and an arquated tragus, curving in an almost luniform manner towards the anterior portion of the ear, like that of the V. *serotinus*, Daub. Geoff., though not so broad. The upper incisor teeth, like those of several of our species of bats, are not prominent; they are very much inclined forward, and do not rise at their tips above the level of the intermediate callosity.

NOTE [27]. Page 153.

1. *Canis latrans.*—Cinereous or gray, varied with black above, and dull fulvous, or cinnamon; *hair* at base dusky plumbeous, in the middle of its length dull cinnamon, and at tip gray or black, longer on the vertebral line; *ears* erect, rounded at tip, cinnamon behind, the hair dark plumbeous at base, inside lined with gray hair; *eyelids* edged with black, superior eyelashes black beneath, and at tip above; supplemental lid margined with black-brown before, and edged with black-brown behind; *iris* yellow; *pupil* black-blue; spot upon the lachrymal sac black-brown; *rostrum* cinnamon, tinctured with grayish on the nose; *lips* white, edged with black, three series of black seta; *head* between the ears intermixed with gray, and dull cinnamon, hairs dusky plumbeous at base; *sides* paler than the back, obsoletely fasciate with black above the legs: *legs* cinnamon on the outer side, more distinct on the posterior hair: a dilated black abbreviated line on the anterior ones near the wrist; *tail* bushy, fusiform, straight, varied with gray and cinnamon, a spot near the base above, and tip black: the tip of the trunk of the tail, attains the tip of the os calcis, when the leg is extended; *beneath* white, immaculate; *tail* cinnamon towards the tip, tip black; posterior feet four-toed, anterior five-toed.

	ft.	in.
Total length (excepting the hair at tip of tail) -	3	9½
Trunk of the tail - - - - - - -	1	0½
Hind foot os calcis to tip of claw - - - -	0	7⅕
Fore foot elbow to tip of claw - - - - -	1	0¾
Ears from top of head - - - - - -	0	4
Rostrum from anterior canthus of the eye - -	0	3¾

Taken in a trap, baited with the body of a wild cat.

The line on the anterior side of the anterior feet, near the wrist, is wanting in a second specimen.

This species varies very much in size; another specimen measured—

	ft.	in.
In total length (excepting the hair at tip of tail)	3	2½
Tail do. do.	0	11¾
Ear from top of head to tip	0	3⅝

The snout was narrower than in the preceding specimens, but in colour similar.

Another specimen was destitute of the cinnamon colour, excepting on the snout, where it was but slightly apparent; the general colour was, therefore, gray with an intermixture of black, in remote spots and lines, varying in position and figure with the direction of the hair.

2. *Canis nubilus.*—Dusky, the hair cinereous at base, then brownish-black, then gray, then black; the proportion of black upon the hairs is so considerable as to give to the whole animal a much darker colour than the darkest of the *latrans*; but the gray of the hairs combining with the black tips, in the general effect, produce a mottled appearance; the gray colour, predominates on the lower part of the sides; *ears* short, deep brownish-black, with a patch of gray hair on the anterior side within; *muzzle* blackish above; *superior lips*, anterior to the canine teeth, gray; *inferior jaw* at tip, and extending in a narrowed line backwards, nearly to the origin of the neck, gray; *beneath* dusky ferruginous, greyish, with long hair between the hind thighs, and with a large white spot on the breast; the ferruginous colour is very much narrowed on the neck, but is dilated on the lower part of the cheeks; *legs* brownish-black, with but a slight admixture of gray hairs, excepting on the anterior edge of the hind thighs, and the lower edgings of the toes, where the gray predominates; the *tail* is short, fusiform, a little tinged with ferruginous, black above, near the base and at tip, the tip of the trunk hardly attaining to the os calcis; the longer hairs of the back, particularly over the shoulders, resemble a short sparse mane.

	ft.	in.
Length from the tip of the nose to the origin of the tail,	4	3¾
Length of the trunk of the tail,	1	1
Ear, from anterior angle to the tip,	0	3¾
From the anterior angle of the ear, to the posterior canthus of the eye,	0	4¾
From anterior canthus of the eye, to the middle of the tip of the nose,	0	5½

	ft.	in.
Between the anterior angles of the ears, rather more than - - - - - - -	0	3

The aspect of this animal is far more fierce and formidable than either the common red wolf, or the prairie wolf, and is of a more robust form. The length of the ears and tail distinguish it at once from the former, and its greatly superior size, besides the minor characters of colour, &c., separate it from the prairie wolf. As the black wolf (C. lycaon,) is described to be of a deep and uniform black colour, and his physiognomy is represented to be nearly the same as that of the common wolf, it is beyond a doubt different from this species. It has the mane of the *mexicanus*. It diffuses a strong and disagreeable odour, which scented the clothing of Messrs. Peale and Dougherty, who transported the animal several miles from where they killed it to the cantonment.

1. *Sylvia celatus.*—*Above* dull greenish-olive; *rump* and *tail coverts* purer greenish-olive; *primaries* and *tail feathers* blackish-brown, olive-green on the exterior margins, and white on the interior margin; *head* very slightly and inconspicuously crested; *crest* with the feathers orange at base; *bill* horn colour, slender, base of the inferior mandible whitish beneath; *beneath* olivaceous yellow; *inferior tail coverts* pure yellow; *legs* dusky.

Length 5¼ inches.

Shot at Engineer Cantonment early in May, This bird is distinguished by the colour of the feathers on the crown of the head, which are of a fulvous colour, tipped with the same colour as that of the neck and back, so that the fulvous colour does not appear at first sight. The wings are destitute of any white band, and the margins of the six exterior primaries are much paler than those of the others. We cannot find any description of this bird; it seems, however, to approach nearest to the S. *leucogastra*, Steph., Nashville warbler of Wilson; but in our specimen the belly is not white, neither does Wilson's description of the colour of the head of his Nashville warbler agree at all with that of our bird.

2. *Sylvia bifasciata.*—Above bluish; all beneath white; *head* highly varied with darker; between the eyes and bill blackish; *bill* black; *interscapulars* lineate with blackish; *wings* blackish; *shoulders* bluish; *wing coverts* with two white bands; *primaries* margined with white on the inner side, and with plumbeous on the exterior side; *tail* black; *feathers* blackish, white on the inner margin, and plumbeous on the exterior margin; and,

excepting the two middle ones, with a white spot on the inner side, near the tip; *flanks* spotted with plumbeous; *feet* black.

Length rather more than $4\frac{3}{4}$ inches.

Shot in May, near Engineer Cantonment. This species seems to approach very closely to S. cærulea.

Genus Limosa, Cuv.

Limosa scolopacea.—Dusky cinereous, *bill*; straight; upper mandible a little longer, and very slightly arquated towards the tip; the grooves continued to near the tip, about as long again as the head, yellowish green; *tip* black, dilated, rugose, with a dorsal groove; *palate* with reflected, cartilaginous spines; *head* with a line from the upper mandible, passing over the eye and inferior orbit; white *cheeks*, *chin*, *throat*, and origin of the *breast*, cinerous; the plumage margined with dull whitish; *back* beneath the interscapulars, white; *rump*, plumage white, fasciate with black; *tail coverts*, and *tail* white fasciate with black, which latter colour is more abundant; *lesser wing coverts* margined with whitish; *greater wing coverts* black, terminal margin white: *secondaries* black, margin and submargin white; *primaries* black, interior ones very slightly edged with white; *outer shaft* white. a little longer than the second; *breast* and *belly* white; *sides* spotted or undulated with blackish cinereous; *inferior tail coverts* with black abbreviated bands, the white prevailing; *feet* dirty greenish; *toes* webbed at base, the exterior one reaching the first joint of outer toe, the interior one very short; *hind toe* rather long.

Length from tip of bill to that of the tail, $11\frac{3}{4}$ inches.
Length of bill, - - - $2\frac{3}{4}$
Length of feet, - - - $5\frac{3}{4}$
Length from the knee to the origin of the feathers, $1\frac{1}{10}$

Tail projecting more than one inch beyond the tip of the wing.

Several specimens were shot in a pond near the Bowyer creek. Corresponds with the genus scolopax, Cuv. in having the dorsal grooves at the tip of the upper mandible, and in having this part dilated and rugose; but the eye is not large, nor is it placed far back upon the head; which two latter characters, combined with its more elevated and slender figure, and the circumstance of the thighs being denudated of feathers high above the knee, and the exterior toe being united to the middle toe by a membrane, which extends as far as the first joint, and the toes being also margined, combine to distinguish this species from those of the genus to which the form and characters of its bill would refer it, and approach it more closely to *limosa.* In one specimen the two exterior primaries on each wing were light brown, but the quills were white. It may perhaps with propriety be considered as the type of a new genus, and under the following characters, be placed between the genera scolopax and limosa.

Bill longer than the head, dilated and rugose at tip: *tip* slightly curved downwards, and with a dorsal groove: *nasal groove* elongated; *feet* long, an extensive naked space above the knee; *toes* slightly margined, a membrane connecting the basal joints of the exterior toes; first of the primaries rather longest.

Genus Pelidna, Cuv.

1. *Pelidna pectoralis.*—*Bill* black, reddish-yellow at base; upper mandible with a few indented punctures near the tip; *head* above black, plumage margined with ferruginous, a distinct brown line from the eye to the upper mandible; *cheeks* and *neck* beneath cinerous very slightly tinged with rufous, and lineate with blackish; *orbits* and line over the eye white; *chin* white; *neck* above dusky, plumage margined with cinereous, *scapulars, interscapulars,* and *wing coverts* black, margined with ferruginous, and near the exterior tips with whitish; *primaries* dusky, slightly edged with whitish, outer quill shaft white; *back,* (beneath the interscapulars, *rump*) and *tail coverts* black, immaculate; *tail feathers* dusky, margined with white at tip, two intermediate ones longest, acute, attaining the tip of the wings, black, edged with ferruginous: *breast, venter, vent* and *inferior tail coverts* white, plumage blackish at base; *sides* white, the plumage towards the tail slightly lineate with dusky; *feet* greenish-yellow; *toes* divided to the base.

Length nearly - - 9 inches.
Bill - - - - $1\frac{1}{8}$

This bird in many respects resembles *cinclus,* but as the average size of that bird is stated at seven inches and one or two lines, ours is doubtless a distinct species. Many flocks of them were seen at Engineer Cantonment, both in the spring and autumn, the individuals of which corresponded in point of magnitude: we add a description for the information of ornithologists. It is described from a specimen in the autumnal plumage. In the spring dress, the colour of the superior part of the bird is much paler, almost destitute of black, and the feathers are brownish, margined with pale cinereous;

the superior part of the head is always darker than any part of the neck, and margined with ferruginous; the plumage of the neck beneath, and the breast, does not appear to be subject to so much change, as that of the superior part of the body.

2. *Pelidna cinclus.* Var. — Above blackish-brown, plumage edged with cinereous, or whitish; *head* and *neck* above cinereous with dilated fuscous lines; *eyebrows* white; a brown line between the eye and corner of the mouth, above which the front is white; *cheeks*, *sides of the neck*, and *throat*, cinereous, lineate with blackish-brown; *bill* short, straight, black; *chin*, *breast*, *belly*, *vent*, and *inferior tail coverts* pure white, plumage plumbeous at base; *scapulars* and *lesser wing coverts* margined with white; *greater wing coverts* with a broad white tip; *primaries* surpassing the tip of the tail, blackish, slightly edged with whitish, exterior shaft white, shafts whitish on the middle of their length; *rump* blackish, plumage margined at tip with cinereous tinctured with rufous; *tail coverts* white, submargins black; *tail feathers* cinereous margined with white, two middle ones slightly longer, black, margined with white; *legs* blackish. A male.

Length to tip of tail - - 7 inches.
Bill - - - $\frac{7}{8}$ of an inch.

This bird was shot in November, near Engineer Cantonment, and it is probably a variety of the very variable *cinclus* in its winter plumage.

Note [28]. Page 167.

1. *Coluber flaviventris.* — Olivaceous, beneath yellow; inferior jaw beneath white; scales destitute of carina.

Description. *Body* above, olivaceous; tinged with brown on the vertebræ; *scales* impunctured at tip, posterior edges and basal edge black; *skin* black, beneath yellow, rather paler behind; *inferior jaw* beneath white to the origin of the plates; *head* with nine plates above, two longitudinal series, of about four large scales each, intervening on each side between the two posterior plates and the three posterior supermaxillary plates; intermaxillary plate somewhat heptagonal, dilated, emarginate at the mouth, superior angle obtusely pointed; *eye* black-brown, pupil deep black, surrounded by a whitish line, posterior canthus with two plates.

Plates 176, scales 84
174 - —

Total length - - - - 3 ft. $4\frac{1}{2}$ in.
Tail - - - - - $8\frac{5}{8}$
Head, to the tip of the maxillary bones - $1\frac{3}{20}$

Another specimen, plates 130, scales 91.

Total length - - - - -	3 ft. $11\frac{3}{8}$ in.
Tail - - - - - - -	$11\frac{1}{2}$

Three specimens were found. The inferior surface of one was immaculate, but that of the smaller one had on each side of the plates an obsolete double series of reddish-brown spots, irregularly alternate on each side; these were so indistinct as not to be noticed at the first glance of the eye. The tip of the tail in this last is deficient.

2. *Coluber parietalis.* — Above blackish, with three yellowish fillets, and about eighty red concealed spots; beneath bluish; a series of black dots each side.

Description. *Body* above black-brown, a vertebral greenish yellow vitta, and a lateral pale yellow one, beneath which is a fuliginous shade; between the dorsal and lateral vitta are about eighty concealed red spots or semifasciæ, formed upon the skin and lateral margins of the scales, obsolete towards the cloaca, at which the series terminates; *scales* elongated, all carinate, and slightly reflexed at the lateral edges; *head* dark olive, beneath white, *parietal plates* with a double white spot at the middle of the suture; *intermaxillary plate* subhexagonal, emarginate at the mouth, and at tip hardly angulated, almost rounded in that part, transverse diameter nearly double the longitudinal; *superior maxillary plates* white, intermediate sutures blackish; *eye* yellowish, pupil black, posterior canthus two-scaled, beneath bluish-green, a longitudinal series of black dots each side at the base of the scuta, terminating at the cloaca.

Plates 165, scales 88.

Total length - - - - -	1 ft. $3\frac{3}{10}$ in.
Tail - - - - - -	$4\frac{9}{10}$

This is a common serpent in this section of country. In order to render the lateral red spots very apparent, it is necessary to dilate the skin, when they exhibit a very striking character, being of a vermilion red. It varies in having the lateral series of red spots alternating with a series of smaller red spots nearer to the dorsal line.

In common with *ordinatus* it has a double common white spot on the parietal plates, and a series of black spots on each side of the inferior surface of the body; but in addition to the proportions of plates, and scales, and length of tail, the red colour of the lateral concealed spots very sufficiently denotes its specific dissimilarity from that most common of the serpents of the United States.

3. *Coluber proximus.* — Body above black, trilineate, vertebral line ocraceous, lateral one yellowish, a double white spot on the parietal plates.

Description. *Body* above black, with three vittæ; vertebral vitta ocraceous, occupying the dorsal series of scales and a moiety of each one of the second series each side; lateral vitta greenish-yellow, occupying more than the moiety of the seven and eight series of scales: beneath the lateral vitta the black is tinged with greenish-blue; *head* with seven olivaceous plates above; parietal ones with a double, white, longitudinal spot: *intermaxillary plate* pentangular, the superior termination obtusely rounded; *posterior canthus of the eye* three-scaled, of which the two inferior ones are white; *anterior canthus* white; *supermaxillary plates* bluish-green; *maxillary angles* with a small black dot; *inferior maxilla* white beneath; beneath pale greenish-blue.

Plates 178, scales 86.
Total length - - 2 ft. 7¼ in.
Tail - - - 7¾

Resembles *Coluber saurita*, *ordinatus* and *parietalis*. Numerous longitudinal, abbreviated white lines, may be observed by dilating the black portion of the skin as in *ordinatus;* these lines or spots are obsolete upon the neck and upon the posterior portion of the body. The extreme tip of the tail is wanting in this specimen.

It differs from *saurita* in the numerical proportion which its subcaudal scales bear to its plates; from *ordinatus* it may be distinguished by being destitute of the two series of black points beneath; it is a much more slender serpent than *parietalis*, and the tail is proportionally longer.

NOTE [29]. Page 204.

In corroboration of the remarks given in the text, we add the following account of an interview which Major O'Fallon had with Indians of the Mississippi*, whose agent has been hitherto unable to restrain them from carrying on warlike operations against the Missouri Indians.

In St. Louis, on the 3d April, 1821, B. O'Fallon, agent for Indian affairs on Missouri, met a deputation from the Saukee nation of Indians, on the subject of a most destructive war, carried on by them against the Otoes, Missouries, and Omawhaws of his agency, and spoke to them as follows:—

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* Of the Sauk nation; they call themselves Sauke-waw-ke.

"SAUKEES,

"I am glad you have arrived, before my departure for the Council Bluff, as it affords me an opportunity to address you on a subject that has agitated my mind for some time past. Yes, Saukees, for some time past I have wished to speak to you on a subject that even now makes the blood run warm in my veins.

"In addressing you upon this important subject, I shall not speak to please your ears, but to strike your hearts.

"Saukees, you must recollect to have seen me frequently; but you do not know me, and I know you well. I recollect when I first visited your land, your balls whistled round my ears. I was then a boy, and wished to be a man—I am now a man, with a heart as strong as my strength.

"A few winters since, I was a chief to the red skins of the upper Mississippi (Sioux and Foxes); I am now chief to the red skins of Missouri, some of whose blood you have spilt. Listen that you may hear me; dispose your minds to understand me; and remember well what I am now going to tell you, and carry my words to your nation, that they may not deceive themselves.

"When I first climbed the rapid Missouri, I found the red skins as wild as wolves. Without ears they roved through the plains, only thirsting for each other's blood. They could only see the storm as it gathered around them; they could only see the clouds when they obscured the sun, and hear it thunder when it rained: but when I sat down on their land, they assembled around me; they listened to my words; I settled the difference that existed between them, and gave peace to the land. They then sat down to rest; but they could not rest long, for the Saukees of the Mississippi, you whom the Big Knives, like fools, have suffered to live, came and disturbed them in their sleep. When disturbed, not like women did they mourn their misfortunes; but like men, they rose in arms and came to me. I did not consult my feelings; I consulted the feelings of my nation, and I was for peace. I told them to sit down, and they did so. Keep your ears open that you may hear me, and raise your eyes that you may see me, for I have saved your blood. Yes, Saukees, I restrained their arms, and they sat down in tears. But you were not satisfied: you presumed upon their forbearance, and came again; but they were not asleep, and you did not spill their blood, but you stole their horses: you stole horses from the whites, who, like fools, had still suffered you to live; and you murdered some traders, who were also white. They again raised their arms; every body who were there at the time, both whites and red skins, raised their arms, and looked around them; but they could not see you; for, like the timid wolf, you had sought the wood, where they could not follow you, until they had consulted me—I, whose blood began to boil in my veins. Saukees, my heart was for war; but my nation was too much for peace, and it was my business to promote peace; therefore I gave them some tobacco, and told them once more to sit down, and endeavour to restrain their feelings: they did so; and I left them smoking their pipes, and came away to see the great American Chief. After I left them, you returned again to their land: you found them asleep; you stole their horses, murdered their women and children, took their scalps, and carried some of them prisoners to your villages.

"How long, how long, Saukees, will you continue to disturb the repose of other nations? How long will you (like the serpent creeping through the grass) continue to disturb the unsuspecting stranger passing through your country? Be cautious how you disturb the red skins of Missouri; or your women and children shall mourn the loss of husbands and fathers—husbands and fathers shall mourn the loss of wives and children.

"Yes, Saukees, the Otoes, Missouries, and Omawhaws, are unwilling to be disturbed any longer. They will no longer suffer you to make slaves of their children, and dance their scalps in your villages.

"Saukees, be cautious; you live in the woods, and the game of your country is nearly exhausted. You will soon have to desert those woods in which the red skins of Missouri cannot find you, and follow the buffalo in the plains, where the red-skins are not less brave than you, and as numerous as the buffalo. As long as you have the wood to conceal your warriors, you may continue to disturb the women and children of Missouri; but when hunger drives you from those woods, your bodies will be exposed to balls, to arrows, and to spears. You will only have time to discharge your guns, before, on horseback, their spears will spill your blood. I know that your guns are better than those of Missouri, and you shoot them well: but when you reach the prairies, they will avail you nothing against the Otoes, Missouries, Omawhaws, and Pawnees. As you have seen the whirlwind break and scatter the trees of your woods, so will your warriors bend before them on horseback. (Here B. O'Fallon paused, to give the Saukees an opportunity to reply; when one of their most distinguished partisans rose and spoke with energy and animation, recounting many of his feats in war. He mentioned how often he had struck upon the tribes of Missouri, and that the Otoes had killed his brother, whom he loved as a father, and whose spirit could not be apppeased as long as an Oto walked erect upon the earth. He also spoke of the difficulty of restraining his young warriors, who were unwilling to die in obscurity. To which B. O'Fallon spoke to the following effect:)

"Saukees, one of your partizans, forgetting to whom he was speaking, has had the presumption to recount his feats in war, how often he had struck the red skins of Missouri, and to insinuate that he was unwilling to restrain his young men. I believe him to be a man of sense; but he has spoken without reflection, he has spoken like a fool.

"Saukees, it has always been, and still is, my business to prevent (if possible) the effusion of human blood—to give peace and happiness to the land; but when I cannot stop the running of blood, I will probe the wound, and make it run more fast.

"I wish you to understand that the Otoes and Missouries, though few in number, and much exposed, do not beg for peace; and I do not ask it for them. They have not as yet revenged the death of some of their murdered countrymen: the spirits of these dead are not satisfied. No, Saukees, these red skins, whom you persecute, have opened their ears to my words, and are constantly looking towards me. They do not wish a dishonourable peace. I would sooner see you drink their blood, than suffer them to make a dishonourable peace. You have a few of their children as prisoners among you; if you consult the interest of your nation, you will send them to their mothers: if you do not deliver them up, the red-skins of Missouri will go after them; and in hunting them they may find some of yours.

"I tell you to be cautious, Saukees, how you disturb the red skins of Missouri. They call themselves my children: be cautious how you disturb my children, or I will no longer look to the pacific disposition of my nation, but consult my own feelings, and probe the wound which I cannot heal.

"I am not like many white chiefs whom you have been accustomed to see. I never act an humble part. I am one of those white men who never fear a red skin — when I move amongst them, it is not like a dog with his tail between his legs, but as becomes a man; and when I speak, I feel the strength of my nation.

" On the Missouri I have guns, powder and balls, blankets, breech-clouts, and leggings, and I am now getting more. I know where you have your village, and I know the face of the country over which you stretch your limbs. I know how and where you are scattered on hunting excursions. I know where you are most exposed, and what I do not know I can easily learn from the whites, and other red skins of the Mississippi.

" I have every thing that a red skin wants; and you all know he wants only the means of war. You know that all red skins are fond of war, and that I can make brother fight brother.

" Saukees; you are a strong nation of red skins; but if you don't endeavour to restrain the ungovernable disposition of some of your young men, they will expose your hearts in the midst of your strength.

" Yes, Saukees, be cautious how you offend me; lest I assemble an army of red skins, and from some high peak on Missouri, show them where to find your village, and your exposed and scattered lodges. I know that the red skins of Missouri cannot destroy you directly; but they can give you unpleasant dreams. Be cautious, Saukees, how you deceive yourselves, or suffer others to deceive you, or the day will come when some of your children will have the misfortune to behold the dogs fighting over the bones of their fathers upon this land; and as I may have many years to live, I don't intend to sit still; and if I continue to increase in strength as I have done, I may live to see the day when I can make you smile, or shed tears of blood. Saukees, I have done, I am going to the Council Bluff."

The Chief of the Saukees, after consulting each warrior separately, replied, (in substance) as follows: —

" American Chief, I have been attentive, and I have heard your words, and those of the *red head* (Gov. Clark). Yours entered one ear, and his the other: they shall not escape until my nation hears them. I feel the truth of all you have said, and have never been more for peace than now. All those braves have expressed their wish for peace with the red skins of Missouri. This partizan, who without reflection spoke exultingly of his feats, since he has heard your words is also for peace; not from any fear of those whom he has bled, but from an unwillingness to displease you, whom he conceives to be a man of truth.

"At our village on Rock river, and encampment at the De Moyen, we have five Oto prisoners, whom I will promise to deliver up, when you send for them.

"My brother, I only regret that my nation was not present on this occasion, to have heard your words. The wisdom of my nation, all the reflecting men, are for peace; but we have many young men difficult to restrain, whose ears, (I believe,) would open to words coming from your mouth, when mine, for the want of strength, may fail.

"My brother, I wish you to pause — I wish you to forbear until I disclose your words to my people, and you hear from them.

"My brother, we receive you as the son of the *red head*; and inasmuch as we love him, we love you, and do not wish to offend you."

NOTE [30]. Page 236.

Humboldt observes of the natives of New Spain, that "their head never becomes gray. It is infinitely more rare to find an Indian than a negro with gray hairs; and the want of a beard gives the former a continual air of youth. The skin of Indians is also less subject to wrinkles." In this latter character, at least, it will be perceived, that our observations on the Missouri Indians do not coincide with those of the Baron, respecting the natives he describes. Ulloa informs us, that the symptoms of old age are a beard and gray hairs. But the natives of the region of the Missouri have certainly no greater density of beard, when advanced in age, than during their earlier years, though it is equally certain, that owing to a neglect of personal neatness, their beard is suffered to grow; yet, agreeably to our opportunities of judging, its ordinary character of sparse distribution is never changed.

END OF THE FIRST VOLUME.

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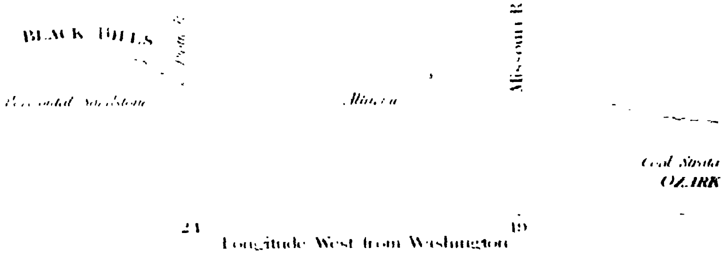

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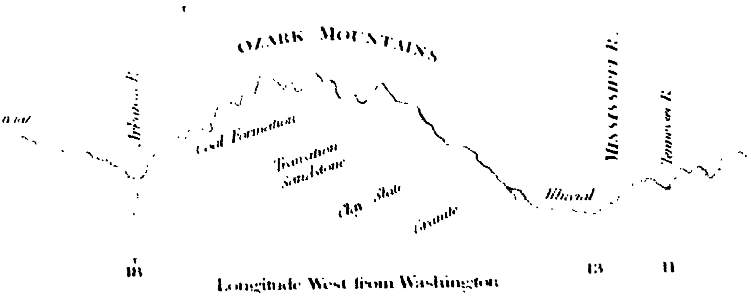

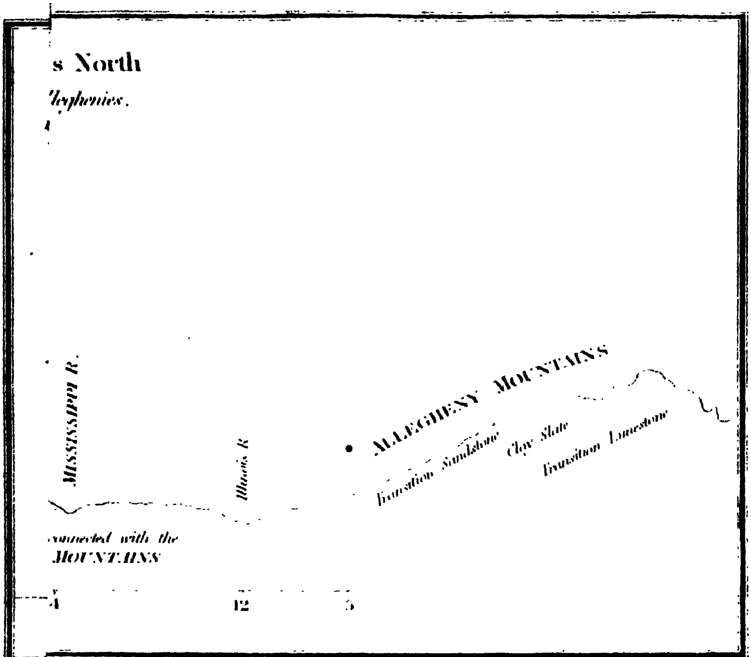

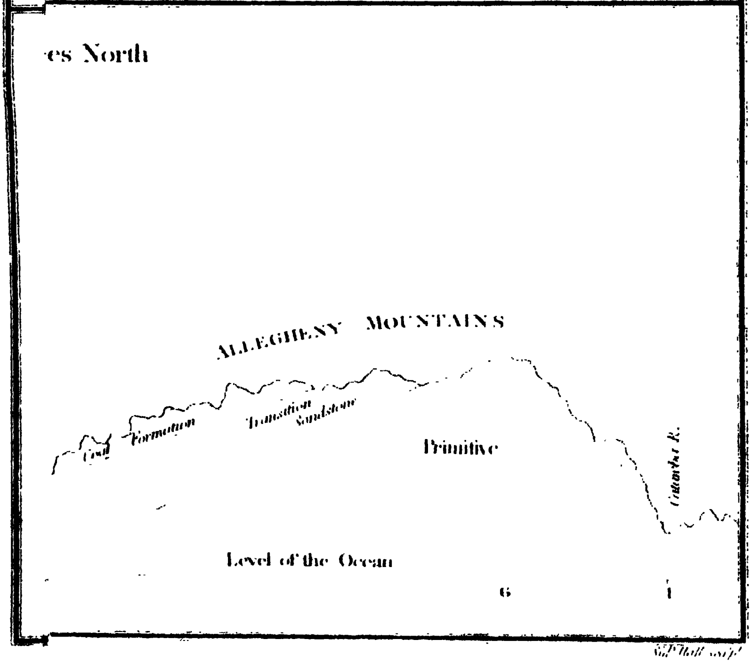

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EXPEDITION

FROM PITTSBURGH

TO THE ROCKY MOUNTAINS.

CHAPTER I.

DEPARTURE FROM PITTSBURGH — NORTH-WESTERN SLOPE OF THE ALLEGHANY MOUNTAINS — RAPIDS OF THE OHIO.

EARLY in April, 1819, the several persons constituting the exploring party had assembled at Pittsburgh. It had been our intention to commence the descent of the Ohio, before the middle of that month; but some unavoidable delays in the completion of the steam boat, and in the preparations necessary for a long voyage, prevented our departure until the first of May. On the 31st of March, the following instructions were issued by the commanding officer, giving an outline of the services to be performed by the party, and assigning to each individual the appropriate duties:—

"Pursuant to orders from the Hon. Secretary of War, Major Long assumes the command of the expedition about to engage in exploring the Mississippi, Missouri, and their navigable tributaries, on board the United States' steam-boat, Western Engineer.

"The commanding officer will direct the movements and operations of the expedition, both in relation to military and scientific pursuits. A strict observance of all orders, whether written or verbal, emanating from him, will be required of all connected with the expedition. The prime object of the expedition being a topographical description of the country to be explored, the commanding officer will avail himself of any assistance he may require of any persons on board to aid in taking the necessary observations. In this branch of duty, Lieutenant Graham and Cadet Swift will officiate as his immediate assistants.

"The journal of the expedition will be kept by Major Biddle, whose duty it will be to record all transactions of the party that concern the objects of the expedition, to describe the manners and customs, &c. of the inhabitants of the country through which we may pass; to trace in a compendious manner the history of the towns, villages, and tribes of Indians we may visit; to review the writings of other travellers, and compare their statements with our own observations; and in general to record whatever may be of interest to the community in a civil point of view, not interfering with the records to be kept by the naturalists attached to the expedition.

"Dr. Baldwin will act as botanist for the expedition. A description of all the products of vegetation, common or peculiar to the countries we may traverse, will be required of him, also the diseases prevailing among the inhabitants, whether civilized or savages, and their probable causes, will be subjects for his investigation; any variety in the anatomy of the human frame, or any other phenomena observable in our species, will be particularly noted by him. Dr. Baldwin will also officiate as physician and surgeon for the expedition.

"Mr. Say will examine and describe any objects in zoology, and its several branches, that may come under our observation. A classification of all land and water animals, insects, &c. and a particular description of the animal remains found in a concrete state will be required of him.

" Geology, so far as it relates to earths, minerals, and fossils, distinguishing the primitive, transition, secondary, and alluvial formations and deposits, will afford subjects of investigation for Mr. Jessup. In this science, as also in botany and zoology, facts will be required without regard to the theories or hypotheses that have been advanced on numerous occasions by men of science.

" Mr. Peale will officiate as assistant naturalist. In the several departments above enumerated, his services will be required in collecting specimens suitable to be preserved, in drafting and delineating them, in preserving the skins, &c. of animals, and in sketching the stratifications of rocks, earths, &c. as presented on the declivities of precipices.

" Mr. Seymour, as painter for the expedition, will furnish sketches of landscapes, whenever we meet with any distinguished for their beauty and grandeur. He will also paint miniature likenesses, or portraits, if required, of distinguished Indians, and exhibit groups of savages engaged in celebrating their festivals, or sitting in council, and in general illustrate any subject, that may be deemed appropriate in his art.

" Lieutenant Graham and Cadet Swift, in addition to the duties they may perform in the capacity of assistant topographers, will attend to drilling the boat's crew, in the exercise of the musket, the field-piece, and the sabre.

" Their duties will be assigned them, from time to time, by the commanding officer.

" All records kept on board the steam-boat, all subjects of natural history, geology, and botany, all drawings, as also journals of every kind relating to the expedition, will at all times be subject to the inspection of the commanding officer, and at the conclusion of each trip or voyage, will be placed at his disposal, as agent for the United States' government.

"Orders will be given, from time to time, whenever the commanding officer may deem them expedient.

"S. H. LONG, *Major U. S. Engineers,*
commanding Expedition."

On the 3d of May we left the arsenal, where the boat had been built, and after exchanging a salute of twenty-two guns, began to descend the Alleghany, towards Pittsburgh. Great numbers of spectators lined the banks of the river, and their acclamations were occasionally noticed by the discharge of ordnance on board the boat. The important duties assigned the expedition rendered its departure a subject of interest, and some peculiarities in the structure of the boat attracted attention.

We were furnished with an adequate supply of arms and ammunition, and a collection of books and instruments.

On Wednesday the 5th of May, having completed some alterations, which it appeared necessary to make in our engine, and received on board all our stores, we left Pittsburgh and proceeded on our voyage. All the gentlemen of the party, except Dr. Baldwin, were in good health, and entered upon this enterprise in good spirits and with high expectations. Fourteen miles below Pittsburgh, we passed a steamboat lying aground; we received and returned their salute, as is customary with the merchants' boats on the Ohio and Mississippi.

At evening we heard the cry of the whip-poor-will*; and among other birds saw the pelicanus carbo, several turkey vultures, and the tell-tale sandpiper. The spring was now rapidly advancing, the dense forests of the Ohio bottoms were unfolding their luxuriant foliage, and the scattered plantations assuming the cheering aspect of summer.

---

* Caprimulgus vociferus.

A few weeks' residence at and near Pittsburgh, and several journies across the Alleghany mountains, in different parts, have afforded us the opportunity of collecting a few observations relative to that important section of country, which contains the sources of the Ohio.

In the Alleghany river we found several of those little animals, which have been described as a species of Proteus, but which to us appear more properly to belong to the genus Triton. See Note [1] at the end of the volume.

The north-western slope of that range of mountains, known collectively as the Alleghanies, has a moderate inclination towards the bed of the Ohio, and the St. Lawrence, which run nearly in opposite directions along its base. This mountain chain extends uninterrupted along the Atlantic coast, from the Gulf of St. Lawrence south-west to the great alluvial formation of the Mississippi. It crosses the St. Lawrence at the rapids above Quebec, and has been supposed to be connected as a spur to a group of primitive mountains occupying a large portion of the interior of the continent, north of the great Lakes.* An inspection of any of the late maps of North America, will show that this range holds the second place among the mountain chains of this continent. All our rivers of the first magnitude have their sources, either in the Rocky Mountains, or in elevated spurs, projecting from the sides of that range. The largest of the rivers, flowing from the Alleghanies, is the Ohio; and even this, running almost parallel to the range, and receiving as many, and, with a few exceptions, as large rivers from the north as from the south, seems in a great measure independent of it. From the most elevated part of the continent, at the sources of the Platte, and Yellow Stone, branches of the Missouri, the descent towards the Atlantic is at least twice obstructed by ranges of hills nearly parallel, in direction, to each other. Erroneous impressions have heretofore prevailed respecting the character of that part of the country called the Mississippi Valley. If we consider attentively that extensive portion of our continent, drained by the Mississippi, we shall find it naturally divided into two nearly equal sections. This division* is made by a range of hilly country, to be hereafter particularly described, running from near the north-western angle of the Gulf of Mexico north-eastwardly to Lake Superior. Eastward, from this range, to the summit of the Alleghanies, extends a country of forests, having usually a deep and fertile soil, reposing upon extensive strata of argillaceous sandstone, compact limestone, and other secondary rocks. Though these rocks extend almost to the highest summits of the Alleghanies, and retain even there the horizontal position which they have in the plains, the region they underlay is not to be considered as forming a district of table lands. On the contrary, its surface is varied by deep vallies and lofty hills; and there are extensive tracts elevated probably not less than eight hundred feet above the Atlantic ocean. The north-western slope of the Alleghany mountains, though more gradual than the south-eastern, is, like it, divided by deep vallies, parallel to the general direction of the range. In these vallies, many of the rivers, which derive their sources from the interior and most elevated hills of the group, pursue their courses for many miles, descending either towards the south-west, or the north-east, until they at length acquire sufficient force to break through the opposing ridges, whence they afterward pursue a more direct course. As instances, we may mention the Alleghany river, which runs nearly parallel, but in an opposite direction, to the Ohio; the great Kenhawa, whose course above the falls forms an acute angle with the part below; also the Cumberland, and Tennessee, which run a long distance parallel to each other, and to the Ohio. This fact seems to justify the inference, that some other agent than the rivers has been active in the production of the vallies between the subordinate ridges of the Alleghany. There appears some reason to believe that the rocky hills, along the immediate course of the Ohio and the larger western rivers, have received, at least, their present form from the operation of streams of water. They do not, like the accessary ridges of the Alleghany, form high and continuous chains, apparently influencing the direction of rivers, but present groups of conic eminences separated by water-worn vallies, and having a sort of symmetric arrangement. The structure of these hills does not so much differ from that of the Alleghany mountains, as their form and position. The long chains of hills, which form the ascent to the Alleghany, on the western side, are based either on metalliferous limestone, or some of the inclined rocks belonging to the transition formation of Werner, and have their summits capped with the more recent secondary aggregates in strata without inclination, and greatly resembling those found in the plains west of the Ohio. It is not easy to conceive how these horizontal strata, unless originally continuous, should appear so similar at equal elevations in different hills, and hills separated by vallies of several miles in width. If that convulsion which produced the inclination of the strata, of the metalliferous limestone, the clay-slate, and the gray wacke, happened before the deposition of the compact limestone, and the argillaceous sandstones, why are not these later aggregates found principally in the vallies, where their integrant particles would be supposed most readily to have accumulated? On the other hand, if the secondary rocks had been deposited previous to that supposed change, how have their stratifications retained the original horizontal position, while that of the transition strata has been changed?

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* Maclure.

Most of the rivers which descend from the western side of the Alleghany mountains are of inconsiderable magnitude, and by no means remarkable, on account of the straightness of their course, or the rapidity of their currents. The maps accompanying this work, will, in the most satisfactory manner, illustrate the great contrast in this respect, between the district now under consideration, and the eastern slope of the Rocky Mountains. The Tennessee, the Cumberland, the Kentucky, the Kenhawa and Alleghany rivers, though traversed in their courses by rocky dikes, sometimes compressing their beds into a narrow compass, occasioning rapids, and in other instances causing perpendicular falls, yet compared to the Platte, and the western tributaries of the Missouri generally, can be considered neither shoal nor rapid. Their immediate banks are permanent, often rocky, and the sloping beach covered with trees or shrubs, and the water, except in time of high floods, nearly transparent. The waters of the Ohio, and its tributaries, and perhaps of most other rivers, when they do not suspend such quantities of earthy matter as to destroy their transparency, reflect, from beneath their surface, a greenish colour. This colour has been thought to be, in some instances, occasioned by minute confervas, or other floating plants, or to result from the decomposition of decaying vegetable matter. That it depends on neither of these causes, however, is sufficiently manifest, for when seen by transmitted light, the green waters are usually transparent and colourless. Some rivers of Switzerland, and some of South America, which descend from lofty primitive mountains, consisting of rocks of the most flinty and indestructible composition, covered with perpetual snows, and almost destitute of organic beings, or exuviæ, either animal or vegetable, and whose waters have a temperature, even in summer, raised but a few degrees above the freezing point, which circumstance, together with the rapidity of their currents, render them unfit for the abode of vegetable life, and is incompatible with the existence of putrefaction, notwithstanding the transparency of their waters, and the reddish, or yellowish colour of the rocks which pave their beds, have a tinge of green, like the Ohio and Cumberland, at times of low water. It is well known that the water of the ocean, though more transparent than any other, is usually green near the shores; and on soundings, while at main ocean, its colour is blue. Perhaps the power which transparent waters have of decomposing the solar light, and reflecting principally the green rays, may have some dependence upon the depth of the stratum. If this were the case, we might expect all rivers, equally transparent and of equal depth, to reflect similar colours, which is not always the case.

In the southern part of Pennsylvania, the range called particularly the Alleghany ridge, is near the centre, and is most elevated of the group. Its summit divides the waters of the Susquehannah on the east from those of the Ohio on the west.

This mountain consists principally of argillite and he several varieties of grey wacke, grey wacke slate, and the other aggregates, which in transition formations usually intervene between the metalliferous limestone and the inclined sandstone. The strata have less inclination than in the Cove, Sideling, and South mountains, and other ridges east of the Alleghany. The summit is broad, and covered with heavy forests. Something of the fertility of the Mississippi valley seems to extend, in this direction, to the utmost limits of the secondary formation. The western descent of the Alleghany ridge is more gradual than the eastern, and the inclination of the strata in some measure reversed. It is proper to remark, that, throughout this group of mountains, much irregularity prevails in the direction as well as of the dip and inclination of strata. If any remark is generally applicable, it is, perhaps, that the inclination of the rocks is towards the most elevated summits in the vicinity.

Laurel ridge, the next in succession, is separated from the Alleghany by a wide valley. Its geological features are, in general, similar to those of the eastern ranges ; but about its summit, the sandstones of the coal formation begin to appear alternating with narrow beds of bituminous clay-slate. Near the summit of this ridge, coal beds have been explored, and, at the time of our visit, coals were sold at the pits for ten cents per bushel. In actual elevation, the coal strata at the summit of Laurel-hill, fall but little below the summits of the Alleghany. Thus, in traversing from east to west the state of Pennsylvania, there is a constant but gradual ascent from the gneiss at Philadelphia, the several rocky strata occurring one above another, in the inverse order of their respective ages, the points most elevated being occupied by rocks of recent origin, abounding in the remains of animal and vegetable life.

Near the summit of this ridge some change is observed in the aspect of the forest. The deep umbrageous hue of the hemlock spruce, the Weymouth pine, and other trees of the family of the coniferæ, is exchanged for the livelier verdure of the broad-leaved laurel, the rhododendron, and the magnolia acuminata.

Chesnut ridge, the last of those accessary to the Alleghany on the west, deserving the name of a mountain, is somewhat more abrupt and precipitous, than those before mentioned. This ridge is divided transversely by the bed of the Loyalhanna, a rapid, bu beautiful stream, along which the turnpike is built. Few spots in the wild and mountainous regions of the Alleghanies, have a more grand and majestic scenery than this chasm. The sides and summits of the two overhanging mountains, were, at the time of our journey, brown, and to appearance almost naked; the few trees which inhabit them being deciduous, while the laurels and rosebays gave the deep and narrow vallies the luxuriant verdure of spring.

The Monongahela rises in Virginia, in the Laurel ridge, and running northward, receives in Pennsylvania the Yohogany, whose sources are in the Alleghany mountain, opposite those of the Potomac. This river, like most of those descending westward from the Alleghany, has falls and rapids at the points where it intersects Laurel-hill, and some of the smaller ranges. Along the fertile bottoms of the Alleghany river, we begin to discover traces of those ancient works so common in the lower parts of the Mississippi valley, the only remaining vestiges of a people once numerous and powerful, of whom time has destroyed every other record. These colossal monuments, whatever may have been the design of their erection, have long since outlived the memory of those who raised them, and will remain for ages affecting witnesses of the instability of national, as well as individual greatness; and of the futility of those efforts, by which man endeavours to attach his name and his memorial to the most permanent and indestructible forms of inorganic matter.

In the deep vallies west of the Alleghany, and even west of the Laurel ridge, the metalliferous limestone, which appears to be the substratum of this whole group of mountains, is again laid bare. In this part of the range, we have not observed those frequent alternations of clay-slate with this limestone, which have been noticed by Mr. Eaton and others in New England.* In its inclination, and in most particulars of external character, it is remarkably similar to the mountain limestone of Vermont, and the western counties of Massachusetts. Many portions of the interior of the state of Pennsylvania have a basis of this limestone. When not overlaid by clay-slate, and particularly when not in connexion with sandstone, the soils resting on the transition limestone are found peculiarly fertile and valuable, having usually a favourable disposition of surface for agricultural purposes, and abounding with excellent water.

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* Geological Survey of Rensselaer county, p. 11.

The transition limestone is not, however, of frequent occurrence westward of the Alleghany ridge. It appears only in the vallies, and is succeeded by clay-slate and the old sandstone lying almost horizontally. The coal, with the accompanying strata of argillaceous sandstone and shale, are, as far as we have seen, entirely horizontal.

The country westward from the base of the Chesnut ridge has an undulating surface. The hills are broad, and terminated by a rounded outline, and the landscape, presenting a grateful variety of fields and forests, is often beautiful, particularly when, from some elevation, the view overlooks a great extent of country, and the blue summits of the distant mountains are added to the perspective.

Pittsburgh has been so often described, the advantages and disadvantages of its situation, and the gloomy repulsiveness of its appearance, have been so often and so justly portrayed, that we should not think ourselves well employed in recounting our own observations. The Alleghany and the Monongahela at Pittsburgh, where they unite to form the Ohio, are nearly equal in magnitude; the former, however, on account of the rapidity of its current, and the transparency of its waters, is a far more beautiful river than the latter. Its sources are distributed along the margin of Lake Erie, and a portage, of only fifteen miles, connects its navigation with that of the St. Lawrence.

About the sources of the Alleghany are extensive forests of pine, whence are drawn great supplies of lumber for the country below as far as New Orleans. On French Creek, and other tributary streams, are large bodies of low and rather fertile lands, closely covered with forests, where the great Weymouth pine, and the hemlock spruce, are intermixed with beech, birch, and the sugar maple. The great white or Weymouth pine, is one of the most beautiful of the North American species. Its trunk often attains the diameter of five or six feet, rising smooth and straight from sixty to eighty feet, and terminated by a dense conical top. This tree, though not exclusively confined to the northern parts of our continent, attains there its greatest magnitude and perfection. It forms a striking feature in the forest scenery of Vermont, New Hampshire, and some parts of Canada, and New York; rising by nearly half its elevation above the summits of the other trees, and resembling, like the palms of the tropics, so beautifully described by M. De Saint Pierre, and M. De Humboldt, "a forest planted upon another forest."* The sighing of the wind in the tops of these trees, resembles the scarce audible murmurings of a distant waterfall, and adds greatly to the impression of solemnity produced by the gloom and silence of the pine forest. In the southern parts of the Alleghany mountains, pines are less frequent, and in the central portions of the valley of the Mississippi, they are extremely rare.

The coal formation, containing the beds which have long been wrought near Pittsburgh, appears to be of great extent; but we are unable particularly to point out its limits towards the north and east. One hundred miles above Pittsburgh, near the Alleghany river, is a spring, on the surface of whose waters are found such quantities of a bituminous oil, that a person may gather several gallons in a day. This spring is most probably connected with coal strata, as are numerous similar ones in Ohio, Kentucky, &c. Indeed, it appears reasonable to believe that the coal strata are continued along the western slope of the Alleghanies with little interruption, at least as far northward as the brine springs of Onondago. Of all the saline springs belonging to this formation, and whose waters are used for the manufacture of salt, the most important are those of the Kenhawa, a river of Virginia. Others occur in that country of ancient monuments, about Paint Creek, between the Sciota and the Muskinghum, near the Silver Creek hills in Illinois; and indeed in almost all the country contiguous to the Ohio river. Wherever we have had the opportunity of observing these brine springs, we have usually found them in connexion with an argillaceous sandstone, bearing impressions of phytolytes, culmaria, and those tessellated zoophytes, so common about many coal beds. It appeared to us worthy of remark, that in many places, where explorations have been made for salt water, and where perpendicular shafts have been carried to the depth of from two to four hundred feet, the water, when found, rises with sufficient force to elevate itself several feet above the surface of the earth. This effect appears to be produced by the pressure of an aërial fluid, existing in connexion with the water, in those cavities beneath the strata of sandstone, where the latter is confined, or escaping from combination with it, as soon as the requisite enlargement is given, by perforating the superincumbent strata. We have had no opportunity of examining attentively the gaseous substances which escape from the brine pits, but from their sensible properties we are induced to suppose, that carbonic acid, and carburetted hydrogen, are among those of most frequent occurrence.

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* See Humboldt's Personal Narrative, vol. v. p. 46. Also St. Pierre's Paul and Virginia.

The little village of Olean, on the Alleghany river, has been for many years a point of embarkation, where great numbers of families, migrating from the northern and eastern states, have exchanged their various methods, of slow and laborious progression by land, for the more convenient one of the navigation of the Ohio. From Olean downward, the Alleghany and Ohio bear along with their currents fleets of rude arks laden with cattle, horses, household furniture, agricultural implements, and numerous families having all their possessions embarked on the same bottom, and floating onward toward that imaginary region of happiness and contentment, which, like the "town of the brave and generous spirits," the expected heaven of the aboriginal American, lies always "beyond the place where the sun goes down."

This method of transportation, though sometimes speedy and convenient, is attended with uncertainty and danger. A moderate wind blowing up the river, produces such swells in some parts of the Ohio, as to endanger the safety of the ark; and these heavy unmanageable vessels are with difficulty so guided in their descent, as to avoid the *planters*, sunken logs, and other concealed obstructions to the navigation of the Ohio. We have known many instances of boats of this kind so suddenly sunk, as only to afford time for the escape of the persons on board.

On the 6th we arrived at Wheeling, a small town of Virginia, situate on a narrow margin along the bank of the Ohio, at the base of a high cliff of sandstone. Here the great national road from Cumberland comes in conjunction with that of Zanesville, Columbus, and Cincinnati. The town of Cumberland, from which this great national work has received the appellation of the Cumberland road, lies on the north side of the Potomac, one hundred and forty miles E. by S. from Wheeling. The road between these two points was constructed by the government of the United States, at a cost of one million eight hundred thousand dollars. The bridges and other works of masonry, on the western portion of this road, are built of a compact argillaceous sandstone, of a light gray or yellowish white colour, less durable than the stone used in the middle and eastern sections, which is the blue metalliferous limestone, one of the most beautiful and imperishable among the materials for building which our country affords. A few miles from Wheeling, a small but beautiful bridge, forming a part of this road, is ornamented with a statue of that distinguished statesman, Mr. Clay; erected, as we were informed, by a gentleman who resides in that neighbourhood.

In an excursion on shore, near the little village of Charleston in Virginia, we met with many plants common to the eastern side of the Alleghanies; beside the delicate sison bulbosum, whose fruit was now nearly ripened. In shady situations we found the rocks, and even the trunks of trees to some little distance from the ground, closely covered with the sedum ternatum, with white flowers fully unfolded. The cercis canadensis, and the cornus florida, were now expanding their flowers, and in some places occurred so frequently, as to impart their lively colouring to the landscape. In their walks on shore, the gentlemen of the party collected great numbers of the early-flowering herbaceous plants, common to various parts of the United States. An enumeration of a few of the species most commonly known, with the dates of their flowering, is given in Note [2].

The scenery of the banks of the Ohio, for two or three hundred miles below Pittsburgh, is eminently beautiful, but is deficient in grandeur and variety. The hills usually approach on both sides nearly to the brink of the river; they have a rounded and graceful form, and are so grouped as to produce a pleasing effect. Broad and gentle swells of two or three hundred feet, covered with the verdure of the almost unbroken forest, embosom a calm and majestic river; from whose unruffled surface, the broad outline of the hills is reflected with a distinctness equal to that with which it is imprinted upon the azure vault of the sky. In a few instances near the summits of the hills, the forest trees become so scattered, as to disclose here and there a rude mass, or a perpendicular precipice of gray sandstone, or compact limestone, the prevailing rocks in all this region. The hills are, however, usually covered with soil on all sides, except that looking towards the river, and in most instances are susceptible of cultivation to their summits. These hilly lands are found capable of yielding, by ordinary methods of culture, about fifty bushels of maize per acre. They were originally covered with dense and uninterrupted forests, in which the beech trees were those of most frequent occurrence. These forests are now disappearing before the industry of man; and the rapid increase of population and wealth, which a few years have produced, speaks loudly in favour of the healthfulness of the climate, and of the internal resources of the country. The difficulty of establishing an indisputable title to lands, has been a cause operating hitherto to retard the progress of settlement, in some of the most fertile parts of the country of the Ohio; and the inconveniences resulting from this source still continue to be felt.

On the 7th, we passed the mouth of the Kenhawa, and the little village of Point Pleasant. The spot now occupied by this village is rendered memorable, on account of the recollections connected with one of the most affecting incidents in the history of the aboriginal population. It was here that a battle was fought, in the autumn of 1774, between the collected forces of the Shawanees, Mingoes, and Delawares on one side, and a detachment of the Virginia militia, on the other. In this battle, Logan, *the friend of the whites*, avenged himself in a signal manner of the injuries of one man, by whom all his women and children had been murdered. Notwithstanding his intrepid conduct, the Indians were defeated, and sued for peace; but Logan disdained to be seen among the suppliants. He would not turn on his heel to save his life. "For my country," said he, "I rejoice in the beams of peace; but, do not harbour a thought that mine is the joy of fear. Logan never felt fear. Who is there to mourn for Logan! Not one." This story is eloquently related by Mr. Jefferson, in his "Notes on Virginia," and is familiar to the recollection of all who have read that valuable work.

In the afternoon of the 8th, we encountered a tremendous thunder-storm, in which our boat, in spite of all the exertions we were able to make, was driven on shore; but we fortunately escaped with little injury, losing only our flag-staff with the lantern attached to it, and some other articles of little importance. On the following day we passed Maysville, a small town of Kentucky. On our return to Philadelphia, in 1821, we were delayed some time at this place; and taking advantage of the opportunity thus afforded, we made an excursion into that beautiful agricultural district, south-east of Maysville, about the large village of Washington. The uplands here are extremely fertile, and in an advanced state of cultivation. The disposition of the surface resembles that in the most moderately hilly parts of Pennsylvania; and to the same graceful undulation of the landscape, the same pleasing alternation of cultivated fields, with dense and umbrageous forests, is added an aspect of luxuriant fertility, surpassing any thing we have seen eastward of the Alleghanies. Having prolonged our walk many miles, we entered after sunset a tall grove of elms and hickories; towards which we were attracted by some unusual sounds. Directed by these, we at length reached an open quadrangular area of several acres, where the forest had been in part cleared away, and much grass had sprung up. Here we found several hundreds of people, part sitting in tents and booths, regularly arranged around the area, and lighted with lamps, candles, and fires; part assembled about an elevated station, listening to religious exhortations. The night had now become dark, and the heavy gloom of the forest, rendered more conspicuous by the feeble light of the encampment, together with the apparent solemnity of the great numbers of people, assembled for religious worship, made considerable impression on our feelings.

On the 9th May, we arrived at Cincinnati. Since our departure from Pittsburgh, Dr. Baldwin's illness had increased, and he had now become so unwell, that some delay appeared necessary on his account; as we wished also for an opportunity of making some repairs and alterations in the machinery of the boat, it was resolved to remain at Cincinnati some days. Dr. Baldwin was accordingly moved on shore, to the house of Mr. Glen, and Dr. Drake was requested to attend him. Cincinnati is the largest town on the Ohio. It is on the north bank of the river, and the ground on which it stands is elevated, rising gradually from the water's edge.

Compact limestone appears here, in the bed of the Ohio, and extends some distance in all directions. This limestone has been used in paving the streets, for which purpose its tabular fragments are placed on edge, as bricks are sometimes used in flagging. The formation of limestone, to which this rock belongs, is one of great extent, occupying a large part of the country from the shores of Lake Erie, to the southern boundary of the state of Tennessee. * It appears, however, to be occasionally interrupted, or overlaid by fields of sandstone. It abounds in casts, and

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* Drake's Picture of Cincinnati, page 64. To that work, Cramer's "Navigator," published at Pittsburgh in 1814, and Gilleland's "Ohio and Mississippi Pilot," we refer our readers for very minute, and in general very accurate, accounts of the country along the Ohio.

impressions of marine animals. An orthocerite, in the museum of the college at Cincinnati, measures near three feet in length. Very large specimens of what has been considered lignite, have also been discovered, and parts of them deposited in that collection. We saw here no remains of ammonites. Numerous other species appear to be similar to those found in the limestone of the Catskill and Hellebergh mountains.

The soil, which overlays the limestone of Cincinnati, is a deep argillaceous loam, intermixed with much animal and vegetable matter. Vegetation is here luxuriant; and many plants unknown eastward of the Alleghany mountains, were constantly presenting themselves to our notice. Two species of æsculus are common. One of these has a nut as large as that of the Æ. hippocastanum, of the Mediterranean, the common horse-chesnut of the gardens.

These nuts are round, and after a little exposure become black, except in that part which originally formed the point of attachment to the receptacle, which is an oblong spot three-fourths of an inch in diameter; the whole bearing some resemblance to the eyeball of a deer, or other animal. Hence the name *buck-eye*, which is applied to the tree. The several species of æsculus are confined principally to the western states and territories. In allusion to this circumstance, the indigenous backwoodsman is sometimes called buck-eye, in distinction from the numerous emigrants who are introducing themselves from the eastern states. The opprobrious name of Yankee is applied to these last, who do not always stand high in the estimation of the natives of the south and west. Few of these sectional prejudices are, however, to be discovered in Ohio, the greater part of the population here having been derived from New England. Cincinnati, which in 1810 contained 2500 inhabitants, is now said to number about 12,000. Its plan is regular, and most of the buildings are of brick. The dwellings are neat and capacious, and sometimes elegant.

The site of the town was heretofore an aboriginal station, as appears from the numerous remains of ancient works still visible. We forbear to give any account of these interesting monuments, as they have already been repeatedly described.

On Tuesday, the 18th, the weather becoming clear and pleasant, Dr. Baldwin thought himself sufficiently recovered to proceed on the voyage; accordingly, having assisted him on board the boat, we left Cincinnati at ten o'clock.

During our stay at that place, we had been gratified by the hospitable attentions of the inhabitants of the town. Mr. Glen was unremitting in his exertions to promote the recovery of Dr. Baldwin's health; to him, as well as to Dr. Drake, and several other gentlemen of Cincinnati, all the members of our party were indebted for many friendly attentions.

Below Cincinnati the scenery of the Ohio becomes more monotonous than above. The hills recede from the river, and are less elevated. Heavy forests cover the banks on either side, and intercept the view from all distant objects. This is, however, somewhat compensated by the magnificence of the forests themselves. Here the majestic platanus attains its greatest dimensions, and the snowy whiteness of its branches is advantageously contrasted with the deep verdure of the cotton-wood, and other trees which occur in the low grounds.

The occidental plane tree is, perhaps, the grandest of the American forest trees, and little inferior, in any respect, to the boasted plane tree of the Levant. The platanus orientalis attains, in its native forests, a diameter of from ten to sixteen feet. An American plane tree, which we measured, on the bank of the Ohio, between Cincinnati and the rapids at at Louisville, was fourteen feet in diameter. One which stood, some years since, near the village of

Marietta, was found, by M. Michaux, to measure $15\frac{7}{10}$ft. in diameter, at twenty feet from the ground.* They often rise to an elevation of one hundred and fifty feet. The branches are very large and numerous, forming a spreading top, densely covered with foliage. Many of those trees, which attain the greatest size, are decayed in the interior of the trunk, long after the annual increase continues to be added at the exterior circumference. The growth of the American plane tree does not appear to be very rapid. It was remarked by Humboldt, that in the hot and damp lands of North America, between the Mississippi and the Alleghany mountains, the growth of trees is about one-fifth more rapid than in Europe, taking for examples the platanus occidentalis, the liriodendron tulipifera, and the cupressus disticha, all of which reach from nine to fifteen feet in diameter. It is his opinion that the growth in these trees does not exceed a foot in diameter in ten years.† As far as our observation has enabled us to judge, this estimate rather exceeds than falls short of the truth. This growth is greatly exceeded in rapidity by the baobab, and other trees in the tropical parts of America; also by the gigantic adansonia of the eastern continent‡, and equalled, perhaps, by several trees in our own climate, whose duration is less extended than that of those above mentioned. [3]

The sycamore, or occidental plane tree, has been cultivated for more than one hundred and eighty years in England, yet it does not appear to have become entirely naturalized there, as we are informed by President Smith, that great numbers were killed by the severe frost of the winters of 1810-11. In America this tree is very widely distributed, and extends northward beyond the forty-fifth degree of north latitude. In the fertile alluvial lands of Otter Creek, and other rivers which discharge into Lake Champlain, the sycamore attains more than one half the magnitude which it is seen to reach in the most prolific portions of the Mississippi valley; it appears, therefore, that some other cause than the frigidity of the climate, must have occasioned the destruction of the plane trees in England, since it is well known that the winters of Vermont and Lower Canada far surpass in severity those of the island of Great Britain.

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* Voy. a l'ouest des monts Alleghany, 1804. p. 93.

† Pers. Nar. vol. i. p. 357. Philadelphia Edition.

‡ Salt's Abyssinia, p. 49. Amer. Edit.

The fruit of the sycamore is the favourite food of the paroquet, and large flocks of these gaily-plumed birds constantly enliven the gloomy forests of the Ohio.

During the night of the 18th, the weather being clear, we continued on our voyage, as is customary with most of the steam-boats navigating the Ohio.

It was long since remarked by Mr. Schultz, and considered by him as an inexplicable circumstance, that the reflection, by night, of the image of the banks of the Ohio, does not furnish an infallible guide to the middle of the bed of the river. Nothing is more manifest than that the banks at different places, having different degrees of elevation, and being sometimes naked, and sometimes covered with very tall trees, must, of necessity, cast shadows of different lengths, upon the surface of the water; consequently that the luminous stripe along the middle of the river, from the surface of which the sky and the stars are reflected, must be greatly subject to irregularities in position and direction. This circumstance often proves very annoying to inexperienced pilots, who attempt to navigate the Ohio, or any other river of similar character, by night, as we have had occasion in many instances to experience.

On the morning of the 19th we arrived at Louisville, having passed, in the night, the boats containing the sixth regiment of infantry, then on their way to the Missouri. At Louisville, we stopped to procure a pilot to conduct our boat over the rapids. Two or three pilots appointed pursuant to an act of the legislature of Kentucky, reside at Louisville, always holding themselves in readiness to go on board such boats as are about to descend the rapids, and leaving them again at Shippingsport; for which service they are entitled to receive two dollars for each ark or raft.

At these rapids, called usually the falls of the Ohio, the river descends about twenty-two feet, in a distance of less than two miles. At times of high water an acceleration of current, not usual in other parts of the river, is all that is perceived in passing down this descent: at other times the water is dashed and broken upon the rocky and uneven bed of the channel, called the *Indian chute*, through which a great part of the water passes. The magnificence of a cataract is, however, at no time displayed here; and it is only in peculiar conditions of the atmosphere, that the noise of the fall can be heard at the distance of one-fourth of a mile from the bank of the river.

Large boats ascend the rapids at the time of the spring floods, by the aid of a cable made fast to a tree, or some other object above, and taken in by the capstan. In 1821, the Maysville, a steam-boat of about two hundred tons, was taken up, and had nearly reached the head of the rapid, when the cable broke; and the boat swinging round, was thrown against the rocks, in the bed of the river, and placed in such a situation as to render hopeless all attempts to get her off before the next annual rise of the water. Arks and small barges descend, by the aid of skilful pilots, for great part of the year. It is expected that the navigation of this dangerous rapid will soon be rendered more convenient, by canaling, which can be accomplished at a very inconsiderable expense. The direction of the Ohio, above and below the rapids, is nearly from north-east to south-west, but where the stream passes the rocky obstruction occasioning the fall, it is a little deflected from its course, making a bend towards the west. Thus a point is formed on the south-eastern side projecting from the elevated bank, which, from its present position, would seem to indicate that the bed of the river had changed its place, having formerly traversed the point from north-east to south-west, in a direct line. In times of high floods the water is, in part, discharged through this old channel, and large boats are said to have ascended by that route within a few years past.

On this point stands the small town of Shippingsport, at the foot of the rapids. The proposed canal will traverse the point in the rear of this village. The obstacles to be encountered in opening a canal at this place are but trifling. The soil is firm and gravelly, being based on horizontal strata of compact limestone, and fine argillaceous sandstone.

The sandstone, which is the rock of most common occurrence about the rapids, very closely resembles that of Pittsburgh. It is commonly of a compact texture, having an argillaceous cement, with a laminated structure. At Shippingsport, and at Clarksville, in Indiana, it is succeeded by bituminous clay-slate. While we were waiting at the rapids, several of the party made an excursion to visit the boiling spring, at the foot of the Silver Creek hills, in Indiana, at a little distance from New Albany. This spring is small, discharging no water above the surface of the ground. It is an artificial excavation in the clayey bank of a small stream, called Fountain Creek. It is filled to the level of the water in the creek, the spring itself evidently discharging very little, if any water. That which fills the basin is turbid, being kept in constant agitation by the bubbles of inflammable air which rise through it. The smell of sulphuretted hydrogen is perceptible at considerable distance about the spring; and a piece of silver, held near the surface of the water, was quickly tarnished. The Silver Creek hills are of argillaceous sandstone, and secondary clay-slate; and this spring seems to be placed near the meeting of the two strata.

In the bed of the Ohio, opposite Shippingsport, is a tabular mass of rocks, visible above water for great part of the year, and called Corn Island. On the highest parts of this, are remaining some small portions of the limestone stratum, which appears in many places to have been worn through, and removed by the river. Five or six acres of the surface of this island are of the smooth compact argillaceous sandrock before mentioned, lying horizontally, and divided into squares and parallelograms by the natural fissures. These fissures contain some soil which supports, in the summer, a dense growth of herbaceous plants. Among these, we noticed the hypericum sphæcrocarpum of Michaux, (apparently not the plant mentioned by Nuttall, under that name, which has been noticed near Philadelphia, by Collins and others, but without doubt that originally described by Michaux). Two species of andropogon, the panicum virgatum, solanum nigrum, polygala verticillata, leplanthus gramineus, chenopodium botrys, &c. The lower part of the island is covered with loose sand; bearing some small cotton-wood and willow trees.

The unenclosed grounds, about Louisville and Shippingsport, are extensive, and afford pasturage to great numbers of domestic animals. They are, however, much overrun with luxuriant weeds. The datura strammonium, which is common in every part of Ohio, is sometimes eaten by sheep; and the spiny capsules of the seed, when about half ripened, we have seen eaten with apparent avidity by cows. In addition to this loathsome plant, the common May-weed (anthemis cotula) has become abundant in all the waste-grounds, to the exclusion of the native plants. A few of these, which keep their places with the greatest obstinacy by the road sides, are the sida abutilon and S. spinosa, and the verbena hastata; while the thistles, chrysanthemums and Johnsworts, so common about old fields in New England, are not to be met with. The eleusine mucronata, of *Pursh*, is one of the most frequent grasses along the streets.

The Silver Creek hills are elevated about one hundred and fifty or two hundred feet above the level of the country in the rear of Jeffersonville. They form a continuous range, crossing the country from north to south. On the Kentucky side they constitute the commencement of a rugged and barren district, called the *Knobs*, and extending far to the south. At some remote period this range may have formed a barrier, extending across what is now the immediate valley of the Ohio, and retarding the retreat of the waters from the tract above the falls.* Coal occurs frequently in this range of hills, on the north side of the Ohio; quarries have been opened near the Blue river, in Indiana, about the two Pidgeons, opposite the mouth of Green river, and in various other places.

The larger steam-boats which run on the Mississippi, and the Ohio, ascend usually no farther than Shippingsport; and several of them remain at this place, during several months of the summer, while the water is too low to admit their passing up and down the rivers. This time it is often necessary to spend in repairs of various kinds. The high steam-engines require frequent repairs, and in the difficult navigation of the Mississippi the hulks of vessels are often injured. It frequently happens that the boats built at Pittsburgh, and other places near the sources of the Ohio, are, within three or four years after they are launched, in a condition to require the planking of the hulk to be replaced with new timber. These boats are usually planked with the upland white oak: we have been informed that such as are built lower down on the river, and of timber found in the low grounds, are more durable.

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* Volney.

CHAPTER II.

THE OHIO BELOW THE RAPIDS AT LOUISVILLE.—ASCENT OF THE MISSISSIPPI FROM THE MOUTH OF THE OHIO TO ST. LOUIS.

OUR small boat descended over the rapids without injury; and having taken on board some wood near New Albany, we proceeded on our voyage, with a pressure of steam equalling one hundred pounds to the square inch, upon all parts of the engine exposed to its immediate operation. This enabled us to descend, at the rate of ten miles per hour. A small island in the Ohio, about twenty-three miles below the rapids, is called Flint Island, from the great numbers of fragments of flints, broken arrow points, and various instruments of stone, heretofore used by the Indians, which are found there on turning up the soil. This island has probably been the favourite residence of some tribe, particularly expert in the manufacture of those rude implements, with which the wants of the aboriginal Americans were supplied. The stone employed in these manufactures appears to have been, in most instances, that compact flint, which occurs in nodular masses, in the secondary limestones. In one instance we met with a triangular prism, of a very hard and compact aggregate of felspar, and hornblende, unlike any rock we have seen in the valley of the Mississippi. This prism was about five inches long, with faces of about

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* Observations were made, at Shippingsport, to ascertain the rate of going of our chronometer, the latitude of the place, and for other purposes; according to these, the Falls are in 38° 15′ 23″ N.

an inch in width, and was perforated, from end to end, forming a complete tube, with an orifice about half an inch in diameter, and smoothly polished, both within and without. We were never able to discover to what use this implement could have been applied; nor do we recollect to have met with accounts of any thing analogous to it, except, perhaps, those "tubes of a very hard stone" mentioned by the Jesuit Venegas, as used by the natives of California, in their treatment of the sick.* That it may have passed, by means of the intercourse of various tribes of Indians, from the primitive mountains of California to the rapids of the Ohio, is not, perhaps, improbable. Indirect methods of communication may have conveyed the productions of one part of the continent to another very remote from it. The savages of the Missouri receive an intoxicating bean from their neighbours on the south and west; these again must probably procure it from other tribes inhabiting, or occasionally visiting, the tropical regions.

In the Philadelphia museum are many Indian pipes of that red indurated clay, found only (as far as hitherto known) on the Pipe Stone branch of the little Sioux river of the Missouri; one of these, however, was found on the banks of the Rio de la Plata, in South America: several were found in the territory now called New England, and in the north-eastern part of the continent.

On the 26th we passed the mouth of the Wabash, and arrived at Shawaneetown, ten miles below. Near the mouth of the Wabash, an accident happened to the engine, which rendered it necessary for us to drift down, until we should arrive at some place where repairs might be made. Some of the gentlemen of the party determined to go on shore, and walk to Shawaneetown. In swimming across a creek, three miles above that place, Lieutenant Graham dropped his rifle in the water, and having spent some time in attempts to recover it, did not arrive at Shawaneetown until after the boat had reached that place.

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* Page 108.

On the 27th, several of the party went out to hunt in the forests and swamps, north-west of Shawaneetown. At about four miles' distance from the Ohio, they arrived at the banks of a small pond, three miles long, and only three or four hundred yards wide. Here they killed a turkey, and some small birds. On the bank of the pond, was found a specimen of the Lake Erie tortoise*, depositing its eggs in the sand, at about twenty yards' distance from the water. It had made, with its feet, a hole in the sand, two inches in diameter and four inches in depth, enlarging towards the bottom to three inches. This species occurs frequently in the pools and stagnant waters along the Ohio. We first met with it near the rapids at Louisville. Among other birds, we noticed about Shawaneetown, the pileated woodpecker, the minute tern, numerous flocks of the psittacus caroliniensis, two broods of young wood duck, some gulls, and semipalmated sandpipers. The terns appear to be attracted hither by great numbers of a species of phryganea, with which we found the stomachs of some of them filled. The semipalmated sandpipers were in large flocks, and did not appear stationary.

We left Shawaneetown at twelve o'clock on the 28th, and stopped three miles below, to take in wood; then proceeding forward, at four P. M. we ran aground on a sand bar, seven miles above the "Cave Inn," or "House of Nature." After much exertion, by means of anchors and poles, with the aid of the engine, and all the men, who were under the necessity of jumping into the river, we at length succeeded in getting her off, and ran down to the cave, where we lay by for the night.

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* Testudo geographica of Lesueur.

Early the next morning, we went to visit the cave, of the entrance to which two views were sketched by Mr. Seymour. It is a perpendicular fissure, extending about one hundred and sixty feet into the horizontal limestone cliffs, which here form the north bank of the river. At times of high water, the Ohio flows in, and fills the cave nearly to its roof. In this cave, it is said, great numbers of large bones were some time ago found, but we saw no remains of any thing of this kind. Impressions and casts of the shells of submarine animals are seen in the rocks, forming the sides of the cave, as in all the strata of compact limestone, in this region. The organic remains here, do not appear to be so numerous as those of the rocks at the falls, and at Cincinnati; and are much less distinct, and visible in the fracture; indeed the fracture generally exhibits to the eye no vestige of organic remains. It is upon the surface only, and more especially in such parts of it as are in a certain stage of decomposition, that they are at all to be distinguished.

As far as we could discover, they consist chiefly of the caryophyllæ, similar to the radiated species, so common at the falls of Ohio; of the encrinus, but of this our specimens were not so perfect as to enable us to determine the analogy. Numerous other remains were exhibited, but not sufficiently characterized to be referred to their proper places in the system. The top of the cliff, into which this fissure opens, is said to be the favourite haunt of great numbers of birds of prey. This is not improbable, as many hawks and birds of prey always choose high and inaccessible cliffs to build their nests in. We saw about the tops of these rocks, only one pair of hawks, which we took to be of the red-shouldered species, (falco lineatus,) but a heavy rain, which commenced soon after we had ascended, prevented us from procuring a specimen. About the cave, we found some fragments of pottery, arrow points, and other articles of Indian manufacture.

Near Shawaneetown are extensive salt manufactories, at a place heretofore called the United States' Saline, affording employment and a source of trade to a part of the inhabitants of that village. Common salt, with the nitrates of lime, potash, &c. occur in great plenty, in connexion with the horizontal limestones and sandstones on the Ohio. Of these we subjoin some account, from the mineralogical report of Mr. Jessup. [4]

On the 29th of May we passed the mouths of the Cumberland and Tennessee, the two largest rivers, tributary to the Ohio. At the mouth of the Cumberland is a little village called Smithland; where, for a considerable part of the year, such goods are deposited as are designed for Nashville and other places on the Cumberland.

The Cumberland and Tennessee rivers are, for many miles, nearly parallel in direction, and at no great distance apart. Between them are some low sandstone hills; but, we believe, no lofty range of mountains, as has been sometimes represented. About these hills, also, in the low ridges north of the Ohio, we found the sandstone, which appears to be the basis rock, often overlaid with extensive beds of a pudding-stone, wherein pebbles of white, yellow, and variously coloured quartz, are united in a cement highly tinged by oxide of iron; extensive fields of compact limestone also occur in the same connexion.

About half way between the mouth of the Cumberland and Tennessee, near the old deserted settlement originally called Smithland, are several large catalpa trees. They do not, however, appear to be native; nor have we here, or elsewhere, been able to discover any confirmation of the opinion, that this tree is indigenous to any part of the United States.

It is here called *petalfra*, which, as well as catalpa, the received appellation, may be a corruption from Catawba, the name of the tribe by whom, according to the suggestion of Mr. Nuttall, the tree may have been introduced. Following the directions of the Pittsburgh navigator, we kept near the left shore, below the Cave Inn; by which means we again ran our boat aground, on a sand-bar, where we spent a considerable part of the night in the most laborious exertions. These were at length crowned with success; and having the boat once more afloat, we proceeded with greater caution.

On the 30th, we arrived at a point a little above the mouth of Cash river, where a town has been laid out, called America. It is on the north bank of the Ohio, about eleven miles from the Mississippi, and occupies the first heights on the former, secure from the inundation of both these rivers (if we except a small area three and a half miles below, where there are three Indian mounds, situated on a tract containing about half an acre above high-water mark). The land on both sides of the Ohio, below this place, is subject to be overflowed to various depths, from six to fourteen feet in time of floods; and on the south side, the flat lands extend four or five miles above, separated from the high country by lakes and marshes. The aspect of the country, in and about the town, is rolling or moderately hilly, being the commencement of the high lands between the two rivers above mentioned; below it, however, the land is flat, having the character of the low bottoms of the Ohio. The growth is principally cotton-wood, sycamore, walnut, hickory, maple, oak, &c. The soil is first-rate, and well suited to the cultivation of all products common to a climate of 37 deg. N. lat. From the extensive flat, or bottom, in its neighbourhood, and the heavy growth of timber which there generally prevails, it is probable that the place will be unhealthy, till extensive clearings are made in its vicinity.

This position may be considered as the head of constant navigation for the Mississippi. The Mississippi, from New Orleans to the Ohio, is navigable for boats of the largest size; and America may be considered as the head of constant as well as heavy navigation. Ice is seldom to be found in the Mississippi as low down as the mouth of the Ohio, and never in so large quantities as to oppose any serious obstruction to the navigation.

The navigation of the Ohio has a serious impediment about four and a half miles above the town, occasioned by a limestone bar extending across the river, called the Grand Chain. This bar is impassable in the lowest stage of the water, and will not admit boats of any considerable burden, except in the higher stages.

The Mississippi has, in like manner, two bars, called the Big and Little Chain, which appear to be a continuation of the same range of rocks as that in the Ohio, extending across the point of land situated between the two rivers. These bars are situated a little above the Tyawapatia Bottom, about thirty miles above the mouth of the Ohio, and in low water have but a moderate depth of water across them; which, added to the rapidity of the current, occasions a serious obstacle to the navigation.

Boats suited to the navigation of both rivers above the bars here specified, should be of inferior size; those for the Mississippi not exceeding one hundred tons burden, and those for the Ohio from fifty to seventy-five tons.

Any position on the Mississippi in the neighbourhood of the Ohio would be objectionable, for the following reasons:—First, The rapidity of the current, which renders it difficult to find a safe and commodious landing, there being no rocky-bound shore within thirty miles above and a far greater distance below the point. The Iron Banks, seventeen miles below the mouth of the Ohio, have been thought by some an eligible position for the extensive business, which, it is admitted by all, must centre in this neighbourhood. But at this place there is no safe landing; and besides, the banks are composed of layers of sand and clay alternating with each other, of an acclivity nearly perpendicular, and annually wearing away by the current of the river, which sets strongly against them. These banks are elevated about one hundred and thirty feet above the common level of the river, and are insurmountable, except by a circuitous route, leading from the river a considerable distance above and below them.

Second, There are no positions on the Mississippi, except the Iron and Chalk Banks, for a great distance below the Ohio, secure from inundation. The bottom directly opposite the mouth of the Ohio, on the west side of the Mississippi is elevated a little above high water; but as it is an alluvial shore, having no permanent foundation, and the banks often falling in, it affords no conveniences or security as a place of business.

Third, No places of anchorage for boats of heavy burden are to be found, except in the main channel of the river, where they would be exposed to driftwood, great quantities of which are brought down in times of freshet; and when borne along with the rapid current of the river, occasion serious danger to boats lying in its way.

The town of America is almost entirely exempt from any of these objections;—although it has not a rocky foundation, (which may be said of most of the towns on the Ohio,) the current of the river is so gentle, that no such guard against the undermining and wasting away of the banks is required. In case of an excessive flood, or an unusual quantity of floating ice (which may possibly be apprehended in remarkably cold seasons), the mouth of Cash river, five miles below the town, is a harbour in which boats may lie in perfect security. [5]

We would not encourage the idea, that the site now fixed upon as a town is exclusively the point where business is to be done; but that the town will eventually extend along on that side of the river about four miles, to the Big Chain above described.

In view of the great extent of inland navigation centring at this place, and the incalculable amount of products to be realized, at no distant period, from the cultivation of the rich vallies and fertile plains of the west, a great proportion of which must find a market here, no doubt can be entertained that it will eventually become a place of as great wealth and importance as almost any in the United States.

In the afternoon of the 30th we arrived at the mouth of the Ohio.

This beautiful river has a course of one thousand and thirty-three miles, through a country surpassed in fertility of soil by none in the United States. Except in high floods, its water is transparent, its current gentle, and nearly uniform. For more than half of its course its banks are high, and its bed gravelly. With the exception of about two miles at the rapids, at Louisville, it has sufficient depth of water, for a part of the year, to float vessels of 300 tons burthen to Cincinnati. The country which it washes may, with propriety, be considered under two divisions. The first, extending from its head at Pittsburgh to the little town of Rockport, about 150 miles below the falls or rapids at Louisville, is hilly. This district forms a portion of one of the sides of that great formation of secondary rocks, which occupies the basin of the Mississippi and its tributaries. This formation, like others of the same period, is rough, with small elevations, which are most considerable on its borders, and diminish in proportion as we approach nearer its central parts.

Compact limestone, and sandstone of several varieties, are the rocks which invariably occur along that portion of the Ohio we are now considering. Sandstone of a light gray or ashen colour, of a compact texture, an argillaceous cement, and a slaty or lamellated structure, is the most abundant, and occupies the lowest points which we have hitherto been able to examine. This rock frequently contains alternating beds of coal, bituminous shale, and its accompanying minerals. The beds of compact limestone, which occur in this region, usually rest upon the sandstone just mentioned. Considered as a stratum, its distribution is the reverse of that of the sandstone. It occupies the central and least elevated portions of the formation; and on the borders where the sandstone is most abundant, the limestone is of less extent and of more uncommon occurrence. These remarks are applicable to the hilly district on the upper portion of the Ohio river. From Pittsburgh to Cincinnati, the prospect from the river is that of hills of moderate elevation, sometimes rocky and abrupt, but often sufficiently gradual in their ascent to admit of cultivation to their summits. Their character, as to extent, direction, &c. seems to be determined by the number, direction, and magnitude of the streams which traverse them. They are the remains of what was formerly a continuous and nearly horizontal stratum, with a large deposit of superincumbent soil, which the flowing of water, during the lapse of ages, has channelled and excavated to its present form. These hills diminish in altitude as you approach the falls from above; there they again rise to a height nearly equal to what they attain at the head of the river, and from thence gradually diminish, until they disappear, a little above the confluence of the Ohio and Green rivers. Here commences the low country, which extends west to the Mississippi. It is characterized by the great extent of the river alluvion, the increased width and diminished velocity of the stream. The river banks are low, but thickly wooded with sycamore, cottonwood, river maple, the planera aquatica, cypress, &c. The river hills, which terminate the alluvial district, are distant and low; and it often happens that the surface descends on both sides, from the immediate banks of the river to these hills. Hence, when the waters of the river are sufficiently swollen to flow over its banks, they inundate extensive tracts; from which they cannot return to the channel of the river, and are left stagnant during the summer months, poisoning the atmosphere with noxious exhalations. Many of these inundated tracts have a soil of uncommon fertility, which it is probable will hereafter be recovered from the dominion of the river by dikes or levees.

The beach or sloping part of the immediate bank of the Ohio, throughout its whole extent, is of rather gradual ascent, and covered with timber a considerable distance below high-water mark. The average rapidity of the current of the Ohio is about two and a half miles per hour, and the descent of its surface nine inches per mile, as estimated by Dr. Drake of Cincinnati. The annual inundations happen in the spring. The range between extreme high and low water, in the upper part of the river, is more than 60 feet; but below, where it is not confined by high banks, it is much less.

About the falls of Ohio, the cane, (myegia macrosperma of Persoon,) begins to be seen, and increases in quantity thence westward to the Mississippi. The "Cave Inn Rock," or "House of Nature," which we have before mentioned, is an immense cavern penetrating horizontally into a stratum of compact limestone, which forms the river bank for some distance above Golconda in Illinois. Its entrance is a large and regular arch, placed immediately on the brink of the river, and a similar form is preserved in some degree through its whole extent. The Battery Rock is a high mural precipice of the same stratum, running in a straight line, and forming the northern bank of the river which washes its base. The face of this precipice is smooth and naked, and it is surmounted by a heavy growth of timber. This limestone is compact, entirely horizontal in its position, and filled with organic remains. It is traversed by veins containing sulphuret of lead; and at several places near Golconda, this is accompanied by fluat of lime, in beautiful yellow and violet-coloured crystals. Fluat of lime is also found disseminated in small and irregular masses throughout the rock. At Golconda, six miles below the cave, a coarse gray flinty sandstone is found, extending some distance to the west. This rock forms broad hills on the Kentucky side, between the Cumberland and Tennessee rivers; where it abounds in iron ore of several kinds. Perhaps these hills ought to be considered as a spur from the Cumberland hills. At the mouth of the Tennessee river, is a locality of the columnar argillaceous oxide of iron, which rises from the surface in pyramidal and columnar masses, somewhat resembling the cypress knees.

An extensive tract of land between the Tennessee and Mississippi rivers, included in the recent purchase from the Cherokees, is rocky and broken, abounding in ores of iron and lead, and probably some other minerals. We have seen a specimen of sulphuret of antimony, in possession of an inhabitant, who being a sort of alchymist, greatly delighting in mystery, thought it imprudent to reveal the secret of its particular locality. It is to be hoped, future and more minute examinations than we had the opportunity of making, may hereafter detect valuable mineral depositions in this tract.

The confluence of the Ohio and Mississippi, is in latitude 37° 22′ 9″ north, according to the observations of Mr. Ellicott, and in longitude 88° 50′ 42″ west, from Greenwich. The lands about the junction of these two great rivers are low, consisting of recent alluvion, and covered with dense forests. At the time of our journey, the spring floods having subsided in the Ohio, this quiet and gentle river seemed to be at once swallowed up, and lost in the rapid and turbulent current of the Mississippi. Floods of the Mississippi, happening when the Ohio is low, occasion a reflux of the waters of the latter, perceptible at Fort Massac, more than thirty miles above. It is also asserted, that the floods in the Ohio occasion a retardation in the current of the Mississippi, as far up as the Little Chain, ten miles below Cape Girardeau.* The navigation of the Mississippi above the mouth of the Ohio, also that of the Ohio, is usually obstructed for a part of the winter by large masses of floating ice. The boatmen observe that soon after the ice from the Ohio enters the Mississippi, it becomes so much heavier by arresting the sands, always mixed with the waters of that river, that it soon sinks to the bottom. After ascending the Mississippi about two miles, we came to an anchor, and went on more on the eastern side. The forests here are deep and gloomy, swarming with innumerable mosquitoes, and the ground overgrown with enormous nettles. There is no point near the confluence of the Ohio and Mississippi, from which a distant prospect can be had. Standing in view of the junction of these magnificent rivers, meeting almost from opposite extremities of the continent, and each impressed with the peculiar character of the regions from which it descends, we seem to imagine ourselves capable of comprehending at one view all that vast region between the summits of the Alleghanies and of the Rocky Mountains, and feel a degree of impatience at finding all our prospects limited by an inconsiderable extent of low muddy bottom lands, and the unrelieved, unvaried, gloom of the forest.

Finding it necessary to review the packing of the piston in the steam-engine, which operation would require some time, most of the gentlemen of the party were dispersed on shore in pursuit of their respective objects, or engaged in hunting. Deer, turkeys, and beaver are still found in plenty in the low grounds, along both sides of the Mississippi; but the annoyance of the mosquitoes and nettles preventing the necessary caution and silence in approaching the haunts of these animals, our hunting was without success.

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* Schultz's Travels, vol. 2. p. 92.

We were gratified to observe many interesting plants, and among them several of the beautiful family of the orchidæ [6], particularly the orchis spectabile, so common in the mountainous parts of New England.

The progress of our boat against the heavy current of the Mississippi, was of necessity somewhat slow. Steam-boats in ascending are kept as near the shore as the depth of water will admit; and ours often approached so closely as to give such of the party as wished, an opportunity to jump on shore. On the first of June, several gentlemen of the party went on shore, six miles below the settlement of Tyawapatia bottom, and walked up to that place through the woods. They passed several Indian encampments, which appeared to have been recently tenanted. Under one of the wigwams they saw pieces of honey-comb, and several sharpened sticks, that had been used to roast meat upon: on a small tree near by was suspended the lower jaw-bone of a bear. Soon after leaving these they came to another similar camp, where they found a Shawanee Indian and his squaw, with four children, the youngest lashed to a piece of board, and leaned against a tree.

The Indian had recently killed a deer, which they purchased of him for one dollar and fifty cents — one-third more than is usually paid to white hunters. They afterwards met with another encampment, where were several families. These Indians have very little acquaintance with the English language, and appeared reluctant to use the few words they knew. The squaws wore great numbers of trinkets, such as silver arm-bands and large ear-rings. Some of the boys had pieces of lead tied in various parts of the hair. They were encamped near the Mississippi, for the purpose of hunting on the islands. Their village is on Apple Creek, ten miles from Cape Girardeau.

June 2d. As it was only ten miles to Cape Girardeau, and the progress of the boat extremely tedious, several of the party, taking a small supply of provisions, went on shore, intending to walk to that place.

Above the settlement of Tyawapatia, and near Cape à la Bruche, is a ledge of rocks, stretching across the Mississippi, in a direct line, and in low water forming a serious obstacle to the navigation. These rocks are of limestone, and mark the commencement of the hilly country on the Mississippi. Here the landscape begins to have something of the charm of distant perspective. We seem released from the imprisonment of the deep monotonous forest, and can occasionally overlook the broad hills of Apple Creek, and the Au Vaise, or Muddy river of Illinois, diversified with a few scattered plantations, and some small natural meadows.

About five miles above Cape Girardeau we found the steam-boat Jefferson, destined for the Missouri. She had been detained some time waiting for castings which were on board the Western Engineer. Several other steam-boats, with stores for the troops about to ascend the Missouri, had entered that river, and were waiting to be overtaken by the Jefferson and the Calhoun, which last we had left at the rapids of the Ohio. On the 3d of June we passed that insular rock in the middle of the Mississippi, called the Grand Tower. It is about one hundred and fifty feet high, and two hundred and fifty in diameter. Between it and the right shore is a channel of about one hundred and fifty yards in width, with a deep and rapid current.

In the summer of 1673, Father Marquette and M. Joliet descended the Mississippi, probably as far as the mouth of the Arkansa. Their narrative contains sufficient evidence that they passed the mouth of the Missouri, the Grand Tower, the mouth of the Ohio, &c. As their work may not be easily accessible to many of our readers, we subjoin, in a note, an interesting passage, in which these objects are mentioned. [7]

The strata of sandstone containing the extensive beds of coal which have been explored, about the Muddy river of Illinois, are here divided transversely by the bed of the Mississippi. The Grand Tower, the precipice opposite the mouth of the Obrazo, containing the singular cavity called the Devil's Oven, the Cornice Rock, and other remarkable cliffs, are monuments indicating the great extent to which the Mississippi has channelled its bed in these strata of horizontal sandstone.

The Grand Tower, from its form and situation, strongly suggests the idea of a work of art. It is not impossible that a bridge may be constructed here, for which this rock shall serve as a pier. The shores, on both sides, are of substantial and permanent rocks, which undoubtedly extend across, forming the bed of the river. It is probable, however, that the ledge of rocks called the Two Chains, extending down to Cape à la Bruche, presents greater facilities for the construction of a bridge than this point, as the high lands there approach nearer the river, and are less broken than in the neighbourhood of the Grand Tower. The Ohio would also admit of a bridge at the chains, which appear to be a continuation of the range of rocks here mentioned, crossing that river fifteen miles above its confluence with the Mississippi. We look forward to the time when these great works will be completed.

Compact and sparry limestones are frequent in this region; but all the rocks seem to be acted upon with great rapidity by currents of water. The country on the east side of the Mississippi, back of Fort Chartres, and about the river St. Mary, is much broken by sink holes, having the form of a funnel, and occasioned, probably, by the action of subterraneous streams of water finding their way through the friable sandstones, which underlay the deep and fertile soils in those places. We passed in succession the mouths of the river St. Mary, opposite to which is the fine settlement of the Bois Broule bottoms; the Ocoa, or Kaskaskia river; the St. Lora, a handsome stream, from the west; and the Gabaree Creek, on which stands the old French town of St. Genevieve. The navigation of the Mississippi, above the mouth of the Ohio, is at all times difficult. The current is considerably accelerated by the descent of the river over the rocky traverses which cross its bed. At times of low water, innumerable sand-bars occur in various parts of the channel, rendering the navigation extremely precarious.

A little below the mouth of the Kaskaskia, is a creek called the Saline, entering on the west side. A grant of a tract of land, one league square, was here made by the Spanish government, in favour of a Frenchman named Pegreau, the founder of the deserted town called New Bourbon. The tract included a valuable brine spring, near the mouth of the creek. The proprietor built a house near the bank of the Mississippi, where he resided for some time, and carried on a manufacture of salt; but having occasion to go to France, he rented his works to a man, who for want of funds, or for some other reason, failed to keep them in operation. After the transfer of Louisiana to the United States' Government, this grant, among others, became an object of speculation; and advantage being taken of Pegreau's absence, the worthless tenant was instigated to prosecute his landlord for breach of contract, and by a legal process recovered damages to the amount of nine thousand dollars, for the disbursement of which the property was sold, and fell into the hands of the present proprietors.

At the mouth of the Kaskaskia river, on the east bank of the Mississippi, a town has been recently commenced, called Portland. The high lands approach here to the brink of the river, affording an elevated and advantageous site. The landing is said to be good; and there is reason to expect that Portland will soon rival the old town of Kaskaskia, the present seat of a great portion of the mercantile business in this part of Illinois,

On the 5th the wind blew from the south-east, and with the aid of sails, we were enabled to ascend the river with considerable rapidity. As we were proceeding briskly forward, our boat struck upon one of those concealed trunks of trees so frequent in the Mississippi, and soon afterwards we discovered that a leak had occurred, which made it necessary for us to lie by. By the constant use of the pumps during the remainder of the day, and the following night, we were able to prevent the water from gaining further upon us; and the next day, having discovered the leak, we raised the stern of the boat, by means of a pair of shears, and succeeded in repairing the injury.

On the beach, opposite the place where we lay by for these repairs, was a large flock of pelicans, which remained in sight for several hours. We had met with some wild geese; and a swan, which we saw was unable to fly, having at that time cast its feathers. The yellow-breasted chat, chuck-wills-widow, the falco haliatus, the king-fisher, bank swallow, and numerous other birds, occurred.

At the mouth of the Kaskaskia river, on the east side of the Mississipi, commences the celebrated valley called the American Bottom, extending along the eastern bank of the river last mentioned to the Piasa hills, four miles above the mouth of the Missouri. It is several miles in width, and has a soil of astonishing fertility, consisting of comparatively recent depositions from the river. It has all the disadvantages usually attending tracts of recent river alluvion, the most valuable parts of it being liable to be swept away by the current of the Mississippi, and its surface descending from the brink of the river to the stagnant pools and lagoons, at the outskirts of the valley. But the inexhaustible fertility of its soil makes amends for the insalubrity of the air, and the inconveniences of a flat and marshy situation; and this valley is undoubtedly destined to become one of the most populous parts of America. We were formerly shown here a field that had been cultivated, without manure, one hundred years in succession, and which, when we saw it (in August, 1816) was covered with a very luxuriant growth of corn.

The town of Kaskaskia, the villages of Prairie de Roches, Kahokia, Prairie du Pont, Harrisonville, and Fort Chartres, are situate in this tract. Some of them are in a flourishing condition. Fort Chartres, which was built by the French government, at the expense of one million and an half of dollars, stood near the bank of the river, about twenty miles from Kaskaskia. Not long after they were erected, a part of the works were undermined by the washing of the river; since which time the whole has been suffered to remain in ruins, which are now one-fourth of a mile distant from the river. *

The country west of the Mississippi, opposite the American Bottom, is of a very different character. The high lands approach the river, presenting abrupt declivities, prominent points, and in many places perpendicular precipices from one to two hundred

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* It is stated by Mr. Schultz that Fort Chartres, which was originally built one-fourth of a mile from the river, was undermined in 1808. Vol. 2. p. 37.

feet high, frowning over the brink of the river. One of the most remarkable of these is known by the name of the Cornice Rock. It bounds a narrow arm of the river, which has generally sufficient water to admit the passage of boats. The rock extends nearly in a straight line, having a front of about four hundred yards, the brow of the precipice at some points impending over the channel through which boats pass. The rock rises above, to the height of fifty or sixty feet, smoothly rounded by the attrition of the water, which never rising to the upper part of the precipice, leaves that to project in the form of a cornice. Though the lands on the west side of the Mississippi are less fertile than those of the American Bottom, they are of great value, and have long been objects of scandalous speculation.

Among a variety of stratagems, practised in this part of the country to obtain titles to lands, was one which will be best explained by the following anecdote, related to us by a respectable citizen of St. Genevieve. Preparatory to taking possession of Louisiana in 1805, the legislature passed a law, authorising a claim to one section of land, in favour of any person who should have actually made *improvements*, in any part of the same, previous to the year 1804. Commissioners were appointed to settle all claims of this description; more commonly known by the name of improvement rights. A person, somewhere in the county of Cape Girardeau, being desirous of establishing a claim of this kind to a tract of land, adopted the following method:—The time having expired for the establishment of a right, agreeably to the spirit of the law, he took with him two witnesses to the favourite spot, on which he wished to establish his claim, and in their presence marked two trees, standing on opposite sides of a spring; one with the figures 1803, the other 1804, and placed a stalk of growing corn in the spring. He then brought the witnesses before the commissioners, who upon their declaration, that they had seen corn growing at the place specified, in the spring between 1803 and 1804, admitted the claim of the applicant, and gave him a title to the land. In the old district of Cape Girardeau, as in other parts of Louisiana, the difficulty of establishing indisputable titles to the lands, arising out of the great number of Spanish grants, pre-emption, and improvement claims, has greatly retarded the settlement of the country.* Establishments were made here more than one hundred and fifty years since; yet the features of the country are little changed, retaining the rudeness and gloominess of the original forest.

At five o'clock, on the afternoon of the sixth, we passed the Platteen rock, a perpendicular precipice, not unlike the Cornice rock, near the mouth of a creek of the same name. Along the base of this cliff, we found the water three and sometimes four fathoms deep. In the evening we arrived at Herculaneum, a small village on the west side of the Mississippi, depending principally upon the lead mines for its business.

Here are three shot manufactories, all of them built at the summits of perpendicular precipices; by which means, the expense of erecting high towers has been avoided. Thirty or forty miles to the south-west of Herculaneum, commences the region of the lead mines, which, though not yet satisfactorily explored, is known to extend for many miles through the hilly country, at the sources of the Merameg, the St. Francis, and the other small rivers, rising in the angle between the Mississippi and Missouri, below the mouth of the latter river.

Soon after the cession of Louisiana to the United States, particular care was taken to have all claims to land investigated and registered. Some few may have been omitted, which may be hereafter revived, but these cannot be numerous. In all the recent sales of public lands in the western states and territories, liberal reservations have been made for the encouragement of learning. We subjoin some particulars, extracted from a communication of the commissioner of public lands. From this statement, it will be easy to form an idea of the liberal provision made by government, for the future support of schools and colleges. It is probable, similar grants will be made to the Eastern States. [8]

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* Ample information on the subject of land titles, is contained in Stoddart's Sketches of Louisiana, pages 243—267.

On the 7th, after taking in wood at Herculaneum, we moved up the river; but had scarcely passed the mouth of the Merameg, when we found ourselves unable to stem the heavy current of the Mississippi, on account of the great quantities of mud that had accumulated in the boilers, and prevented our raising the requisite pressure of steam. While we were lying at anchor, to afford the steam engineer an opportunity to clean the boilers, some gentlemen of the party returned along shore to the Merameg, a beauful river, whose limpid and transparent waters present a striking contrast to the yellow and turbid Mississippi. They were fortunate in meeting with many interesting objects, and, among others, an undescribed mus, which has received, from Mr. Ord, the name of floridanus. [9] Upon the specimen, which was a male, was a dilated, glabrous, ventral line, 2¼ inches long. This species is well known in some districts, under the name of large hairy-tailed rat, and is by no means rare in Florida. It is as large as the ordinary stature of the Norway rat, and is equally troublesome. The contents of its stomach were entirely vegetable, consisting of the green bark of trees, and the young shoots of plants. Their nests are large, and are composed of a great quantity of brush. Dr. Baldwin had rarely been able to join in the excursions on shore. Plants were, however, collected and brought to him on board the boat, where he spent much of his time in the examination of such as were interesting or new.*

A few rods above our anchoring ground, were two graves, supposed to be those of Indians. One of them was quite recent, and both were covered with heaps of loose stones, probably designed as monuments, and to protect the graves from the ravages of wolves or other animals. The eighth of June brought us to the small village of Vide Poche, and the following day to St. Louis, where our arrival was noticed by a salute from a six-pounder on the bank of the river, and the discharge of ordnance on board several of the steam-boats lying in front of the town.

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* Near the mouth of the Merameg were collected the Rudbeckia *hirta*, and R. purpurea, a small white flowering species of Houstonia, the Galium tinctorium Smyrnium aureum, a phlox, a new species of potentilla, a conyza, the trifolium reflexum, a beautiful aira, the campunula perfoliata, diospyros virginiana, rhus glabra, and many others. *Dr. Baldwin's MS. Notes.*

CHAPTER III.

TUMULI AND INDIAN GRAVES ABOUT ST. LOUIS, AND ON THE MERAMEG.—MOUTH OF THE MISSOURI.—CHARBONIERE.—JOURNEY BY LAND FROM ST. CHARLES, TO LOUTRE ISLAND.

Saint Louis, formerly called Pain Court, was founded by Pierre La Clade and his associates in 1764, eighty-four years after the establishment of Fort Crevecœur, on the Illinois river. Until a recent period, it was occupied almost exclusively by people of French extraction, who maintained a lucrative traffic with the Indians. The history, and present condition of this important town, are too well known to be dwelt upon in this place. Its population has been rapidly augmented within a few years, by the immigration of numerous families, and its wealth and business extended by the accession of enterprising merchants and mechanics from the Eastern States. As the town advances in importance and magnitude, the manners and customs of the people of the United States, are taking the place of those of the French and Spaniards, whose numbers are proportionably diminishing. As this place seems destined to be the depôt for such articles of merchandize, as are to be sent from New Orleans to the upper rivers, it is unfortunate, that no good harbour offers for the protection of boats against the impetuosity of the current, and from the danger occasioned by floating ice. In this respect, the site of a projected town, a few miles below, has a decided advantage over Saint Louis, as it possesses a good harbour. It was selected many years since, by some Canadian Frenchman, who formed a settlement there.

The horizontal strata of limestone which underlay the town of Saint Louis and the surrounding country, have strongly attracted the attention of the curious, on account of having been found, in one or two instances, to contain distinct impressions of the human foot. There is now in the possession of Mr. Rapp, of the Society of the Harmonites, a stone, which has upon its surface marks that appear to have been formed by the naked feet of some human being, who was standing upon it while in a plastic state; also an irregular line, apparently traced by a stick or wand, held in the hand of the same person. This stone was taken from the slope of the immediate bank of the Mississippi below the range of the periodical floods. To us there seems nothing inexplicable or difficult to understand in its appearance.

Nothing is more probable, than that impressions of human feet made upon that thin stratum of mud, which was deposited on the shelvings of the rocks, and left naked by the retiring of the waters, may, by the induration of the mud, have been preserved, and at length have acquired the appearance of an impression made immediately upon the limestone. This supposition will be somewhat confirmed, if we examine the mud and slime deposited by the water of the Mississippi, which will be found to consist of such an intimate mixture of clay and lime, as under favourable circumstances would very readily become indurated. We are not confident that the impressions above mentioned have originated in the manner here supposed, but we cannot by any means adopt the opinion of some, who have considered them as contemporaneous to those casts of submarine animals, which occupy so great a part of the body of the limestone. We have no hesitation in saying, that whatever those impressions may be, if they were produced, as they appear to have been by the agency of human feet, they belong to a period far more recent, than that of the deposition of the limestone on whose surface they are found.

The country about St. Louis, like that in the rear of Fort Chartres, and indeed like the horizontal limestone country generally, abounds in sink holes sometimes of great depth. These are very numerous, from five to seven miles back of the town. They are in the form of vast funnels, having at the surface a diameter of from twenty to fifty yards. Mr. Say descended into one of these, for the purpose of ascertaining the medium temperature below the surface of the earth. This sink opens at the bottom of a deep ravine. It has two apertures near each other, through which water is admitted, and each large enough to afford passage to the body of a man. Within are two chambers from six to twelve feet in breadth, and thirty-five feet long. At the bottom of the second chamber is a pool of water rather difficult of access. In this apartment the mercury stood at 60° fah.: in a shady part of the ravine about twenty-five feet below the general surface at 75°. The grassy plains to the west of St. Louis are ornamented with many beautifully flowering herbaceous plants. Among those collected there, Dr. Baldwin observed the aristolochia Sipho, cypripedium spectabile *, lilium catesbeiana, bartsia coccinea, triosteum perfoliatum, cistus canadensis, clematis viorna, and the tradescantia virginica. The borders of this plain begin to be overrun with a humble growth of black jack and the witch hazle†, it abounds in rivulets, and some excellent springs of water, near one of which was found a new and beautiful species of viburnum. On the western borders of this prairie are some fine farms. It is here that Mr. John Bradbury, so long and so advantageously known as a botanist, and by his travels into the interior of America, is preparing to erect his habitation. This amiable gentleman lost no opportunity during our stay at St. Louis to make our residence there agreeable to us. Near the site selected for his house is a mineral spring, whose

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* C. parviflorum. † Hamamelis virginica, and quercus nigra.

waters are strongly impregnated with sulphuretted hydrogen gas. Cattle and horses, which range here throughout the season, prefer the waters of this spring to those of the creek in whose bed it rises, and may be seen daily coming in great numbers, from distant parts of the prairie, to drink of it.

Tumuli, and other remains of the labours of nations of Indians that inhabited this region many ages since, are remarkably numerous about St. Louis. Those tumuli immediately northward of the town, and within a short distance of it, are twenty-seven in number, of various forms and magnitudes, arranged nearly in a line from north to south. The common form is an oblong square, and they all stand on the second bank of the river. The statement given below of their forms, magnitudes, and relative positions, is the result of actual admeasurement taken with care, and with as much accuracy as their present indefinite boundaries, together with the dense growth of underwood, covering their surface, and tending to beguile and obstruct the vision of the observer, will admit.

It seems probable these piles of earth were raised as cemeteries, or they may have supported altars for religious ceremonies. We cannot conceive any useful purpose to which they can have been applicable in war, unless as elevated stations from which to observe the motions of an approaching enemy; but for this purpose a single mound would have been sufficient, and the place chosen would probably have been different.

Nothing like a ditch, or an embankment, is to be seen about any part of these works. [10]

Indian graves are extremely numerous about St. Louis, though none are found in the immediate vicinity of the town: they are most frequent on the hills about the Merameg and on the north side of the Missouri. On the 12th June, Mr. Say and Mr. Peale, accompanied by one man, descended the Mississippi, in a small boat to the mouth of the Merameg, and ascended the latter river about fifteen miles, to a place where great numbers of graves have been explored, and have been represented to contain the bones of a diminutive race of men. Most of these graves are found near the bank of the Merameg. They do not rise above the general surface, but their presence is ascertained by the vertical stones which enclose them, and project a little at either end of the grave. When the included earth, and the numerous horizontal flat stones are removed, we find the sides neatly constructed of long flat stones, vertically implanted and adapted to each other, edge to edge, so as to a form a continuous wall. The graves are usually three or four feet, though sometimes six feet in length. The bones they contained appeared to have been deposited after having been separated from the flesh, and from each other, according to the custom of some tribes of Indians at the present day.

In the first grave opened by Mr. Say were found the fragments of an earthen pot, and the bones of an infantine skull; the second contained what appeared to be the remains of a middle aged man, of the ordinary stature, laid at full length; the bones much confused and broken. An inhabitant residing here informed them, that many similar graves had been found along the summits of most of the neighbouring hills. In one of these he had found two pieces of earthenware, one having nearly the form of a porter-bottle; the other with a wide mouth; but this grave contained no bones. After spending a night at this place, they crossed the river to the town of Lilliput, (one of the projected towns here has received this name,) the place so often mentioned as the locality of the graves of a pigmy race. Appearances here are in general similar to those already described. One head that had been dug up was that of an old person, in whom the teeth had been lost, and the alveolæ obliterated, leaving the sharp edge of the jaw-bone. From this the neighbouring settlers had inferred the existence of a race of men without teeth, having their jaws like those of the turtle. Having satisfied themselves that all the bones found here were those of men of the common size, Mr. Say and Mr. Peale "sold their skiff, shouldered their guns, bones, spade, &c. and bent their weary steps towards St. Louis, (distant sixteen miles,) where they arrived at eleven o'clock P. M., having had ample time, by the way, to indulge sundry reflections on that quality of the mind, either imbibed in the nursery or generated by evil communications, which incites to the love of the marvellous, and, by hyperbole, casts the veil of falsehood over the charming features of simple nature."

These graves evidently contain the relics of a more modern people than those who erected the mounds.

On the summit of one of the large hillocks, near St. Louis, (No. 27. described in Note [10],) are several of these graves: we opened five of them, but in one only were we fortunate in finding any thing interesting, and all that this contained was a solitary tooth of a species of rat, together with the vertebræ and ribs of a serpent of moderate size, and in good preservation; but whether the animal had been buried by the natives, or had perished there, after having found admittance through some hole, we could not determine. If they were buried by the Indians, they are probably the bones of a species of crotalus, as it is known that many Indians of the present day have a sort of veneration for animals of that genus. The circumstance of the discovery of these bones renders it somewhat probable, that rattlesnakes were formerly worshipped by the natives of America, and their remains, like those of the Ibis of Egypt, religiously entombed after death.

Whilst we were at Cincinnati, Dr. Drake exhibited to us, in his cabinet of natural history, two large marine shells, that had been dug out of ancient Indian tumuli in that vicinity. These shells were each cut longitudinally, and the larger half of each only remained. From this circumstance it seems probable that they had been used by the aborigines as drinking cups; or, consecrated to superstition, they may have been regarded as sacred utensils, and either used in connection with the rites of sacrifice, or in making libations to their deities; they may, however, like the cymbium of the Archipelago, have served a more useful and salutary purpose in bathing.

One of these specimens seems to be a *Cassis cornutus*, of authors, or great conch shell, though it is proper to observe, that of the three revolving bands of tubercles, characteristic of that species, the inferior one in this specmen is double. In length it is about nine inches and a quarter, and in breadth seven inches.

The other specimen is a heterostrophe shell of the genus *Fulgur* of Montfort; and, as far as we can judge, in every respect the same with those which are, at the present day, found on the coast of Georgia and East Florida, known to naturalists under the name of *F. perversus*, though it is certainly much larger than any of the recent specimens we have seen; its length being nine inches, and breadth six and a half.

Several different countries have been mentioned by authors as the habitation of the *cornutus;* according to Rumphius, it inhabits Amboyna, the straits of Malacca, and the shores of the island of Boeton; Humphreys says it is brought from the East Indies and China; Linnæus believed it to inhabit the coasts of America; but Bruguiere, a more recent author, informs us that Linnæus was probably mistaken in the habitation of this shell, and states it to be a native of the Asiatic ocean.

The *cornutus* becomes of some importance in the question relative to the Asiatic origin of the American Indians. All the authorities to which we have been able to refer, correspond in assigning the shores of Asia, or those of the islands which lie near that continent, as the native territory of this great species of conch, with the sole exception of Linnæus; but as no other author has discovered it on the coasts of this continent, we must believe with Bruguiere, that it is only to be found in the Asiatic ocean.

The circumstance then of this shell being discovered in one of the ancient Indian tumuli, affords, at least, an evidence that an intercourse formerly existed between the Indians of North America and those of Asia; and leads us to believe that even a limited commerce was carried on between them, as it undoubtedly was with the Atlantic coast, from which the Fulgur was obtained.

But although this isolated fact does not yield a positive proof of the long asserted migration of the ancestors of the present race of American Indians from Asia to this country, yet, when taken in combination with other evidence, which has been collected by various authors, with so much industry, it will be regarded as highly corroborative of that popular belief.

In the prairies of Illinois, opposite St. Louis, are numbers of large mounds. We counted seventy-five in the course of a walk of about five miles, which brought us to the hill a few years since occupied by the monks of La Trappe. This enormous mound lies nearly from north to south, but it is so overgrown with bushes and weeds, interlaced with briers and vines, that we were unable to obtain an accurate account of its dimensions.

The survey of these productions of human industry, these monuments without inscription, commemorating the existence of a people once numerous and powerful, but no longer known or remembered, never fails, though often repeated, to produce an impression of sadness. As we stand upon these mouldering piles, many of them now nearly obliterated, we cannot but compare their aspect of decay with the freshness of the wide field of nature, which we see reviving around us; their insignificance, with the majestic and imperishable features of the landscape. We feel the insignificance and the want of permanence in every thing human; we are reminded of what has been so often said of the pyramids of Egypt, and may with equal propriety be applied to all the works of men, "these monuments must perish, but the grass that grows between their disjointed fragments shall be renewed from year to year."*

June 21st. After completing our arrangements at St. Louis, we left that place at noon, and at 10 o'clock on the following day, entered the mouth of the Missouri. From St. Louis upward to the Missouri, the water of the Mississippi, for a part of the year, is observed to be clear and of a greenish colour on the Illinois side, while it is turbid and yellow along the western bank. But at the time of our ascent every part of the Mississippi appeared equally turbid, its waters soon becoming blended with the heavy flood of the Missouri.

The Missouri being now swollen by the spring floods, which had subsided in the Mississippi, entered that river with such impetuosity, as apparently to displace almost the whole body of the waters in its channel. We had occasion to observe that the water of the Missouri passes under that of the Mississippi, rising and becoming mingled with it on the opposite shore, so that a portion of the clear, green waters of the latter river run for some distance in the middle of the channel, and along the surface of the Missouri waters, rendered perhaps specifically heavier by the great quantities of earthy matter mingled with them. The waters of the Missouri are so charged with mud and sand as to be absolutely opake, and of a clay colour; while those of the Mississippi being comparatively clear, and having a somewhat olivaceous tint, afford an opportunity of tracing their respective courses, after their junction in the same channel. At some stages of water they run side by side, and in a great measure unmingled as far as Herculaneum, forty-eight miles below their confluence.

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* Maturin.

We had the pleasure to find, notwithstanding the furnace was supplied with wood of an indifferent quality, that the force of our steam-engine was sufficient to propel the boat against the current of the Missouri, without recourse to the aid of the *cordelle*, which we had expected to find necessary.

We were somewhat surprised to see here a flock of black-headed terns. It is remarkable that these birds, whose ordinary range is in the immediate vicinity of the sea-coast, should ascend this river to so great a distance. They are not seen on the Delaware as high as Philadelphia, unless driven up by storms.

In ascending from the mouth of the Missouri to Bellefontain, a distance of four miles, our boat grounded twice on the point of the same sand-bar, and considerable time was consumed in efforts to get her afloat. A military post was established at Bellefontain, under, the direction of the government of the United States, by General Wilkinson, in 1803; but the soil on which his works were erected has disappeared, the place being now occupied by the bed of the river. A few fruit trees only, which stood in the end of his garden, are yet standing, but are now on the brink of the river. The first bank is here ten or twelve feet high, rising perpendicularly from the water. Near its base are the trunks of several trees with one end imbedded, and the other projecting horizontally over the surface of the water, affording an evidence of the recent deposition of the soil of the low plains, and an admonition of the uncertainty of tenure, on the first bank of the river. One of these projecting trunks is still in good preservation. It is about three feet in diameter, and from its direction, must pass immediately under the roots of two large trees, now occupying the surface of the soil. [11] Similar appearances are frequent along the Mississippi and Missouri, and furnish abundant evidence that these rivers are constantly changing their bed, and, from the great rapidity of the stream, as well as from the appearances presented, we must suppose these changes are not very slowly produced; but their range is confined to the valley within the second banks, which are here raised about seventy feet. On this second bank, in the rear of the site of the former works, the buildings belonging to the present military establishment have been erected. They were commenced in 1810. The houses are of one story, constructed of logs, based upon masonry, and united in the form of a hollow square. At the foot of the second bank rises a fine spring of water, which has given name to the place. Cold Water creek, a very small stream not navigable, discharges itself a few hundred yards above; in times of high water its mouth might afford harbour to small boats. Before the recent change in the bed of the Missouri, this creek entered higher up than at present, and then afforded a good harbour for boats of all sizes. The sixth regiment were encamped here at the time of our arrival, waiting for the contractor's steamboats, three of which we had passed at the mouth of the river.

Here we found it necessary to adjust a tube to the boilers of our steam-engine, in order to form a passage, through which the mud might be blown out: the method heretofore adopted, of taking off one end for the purpose of admitting a man to clean them, proving too tedious when it was found necessary to repeat the operation daily. The expedient of the tube succeeded to our entire satisfaction.

Dr. *Baldwin* found here a plant, which he considered as forming a new genus, approaching astragalus; also the new species of rose, pointed out by Mr. Bradbury, and by him called Rosa mutabilis. This last is a very beautiful species, rising sometimes to the height of eight or ten feet. The linden tree * attains great magnitude in the low grounds of the Missouri; its flowers were now fully expanded.

In ascending from Bellefontain to Charboniere, where we came to an anchor, on the evening of the 24th, we were opposed by a very strong current, and much impeded by sand-bars. On the upper ends of these sand-bars are many large rafts of drift wood; these are also frequent along the right hand shore. In several places we observed portions of the bank in the act of falling or sliding into the river. By this operation, numerous trees, commonly cotton-woods and willows, are overturned into the water.

The forests, on the low grounds immediately in the vicinity of the Missouri, are remarkably dense; but in many instances, the young willows and poplars (which are the first and almost the only trees that spring up on the lands left naked by the river) have not attained half their ordinary dimensions, before, by another change in the direction of the current, they are undermined, and precipitated down, to be borne away by the river. The growth of the cotton-tree is very rapid, that of the salix angustata, the most common of the willows found here, is more tardy, as it never attains to great size. The seeds of both these trees are produced in the greatest profusion, and ripened early in the summer, and being furnished by nature with an apparatus to ensure their wide dissemination, they have extended themselves and taken root in the fertile lands along all the ramifications of the Mississippi, prevailing almost to the exclusion of other trees.

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* Tilia Americana. The Podalyria alba, anemone virginiana, polygala incarnata (prairies) anagallis arvensis, lathyrus decaphyllus, ranunculus fluviatalis, carex multiflora, &c. were collected at Bellefontain. *Dr. Baldwin's MS. Notes.*

Charboniere is on the right bank of the Missouri. This name was given it by the boatmen and the earliest settlers, on account of several narrow beds of coal, which appear a few feet from the water's edge, at the base of a high cliff of soft sandstone. The smell of sulphur is very perceptible along the bank of the river, occasioned doubtless by the decomposition of pyrites, in the exposed parts of the coal beds. Some small masses of sulphate of lime also occur, and have probably derived their origin from the same source.

At St. Charles we were joined by Maj. O'Fallon, agent for Indian affairs in Missouri, and his interpreter, Mr. John Dougherty, who had travelled by land from St. Louis. When Lewis and Clark ascended the Missouri, the town of St. Charles was said to contain one hundred houses, the inhabitants deriving their support principally from the Indian trade. This source having in a great measure failed, on account of the disappearance of the aborigines, before the rapid advances of the white population, the town remained in a somewhat declining condition for several years; but as the surrounding country was soon occupied by an agricultural population, a more permanent though less lucrative exchange is taking the place of the Indian trade. Accordingly within two or three years, many substantial brick buildings had been added, and several were now in progress: we could enumerate, however, only about one hundred houses. There are two brick kilns, a tanyard, and several stores.

A mile or two below St. Charles, are many trunks of trees projecting from the bank, like those mentioned at Bellefontain. In the face of the banks are usually great numbers of the holes made by the bank-swallow for its nest, and the birds themselves are frequently seen.

At St. Charles, arrangements were made for the purpose of transporting baggage for such of the gen-

tlemen of the party as should choose to ascend the Missouri by land, that they might have the better opportunities for investigating the natural history of the country. Messrs. Say, Jessup, Peale, and Seymour, having provided themselves with a horse and pack-saddle, on which they fastened their blankets, a tent, and some provisions, accompanied by one man, left St. Charles at 7 o'clock on the morning of the 26th, intending to keep nearly an equal pace with the steam-boat, in order to rejoin it as occasion might require. Dr. Baldwin, still confined by debility and lameness, was compelled to forego the pleasure of accompanying them.

The Western Engineer proceeded on her voyage, soon after the departure of Mr. Say and his detachment. Having grounded several times in the course of the day, and contending all the way against a heavy current, she proceeded but a few miles. We passed some rocky cliffs; but in general the immediate banks of the river presented the same appearance as below, consisting of a recent alluvium. After we had anchored at evening, Dr. Baldwin was able to walk a short distance on shore, but returned much fatigued by his exertions. [12]

On the morning of the 27th, after having taken in a small supply of indifferent fuel, we crossed over to the right-hand side of the river, and took on board one of the party, who had left the boat at an early hour, to visit a friend residing a short distance from the river. At evening we came to anchor half a mile below Point Labidee, a high bluff, where observations for latitude were taken. Here we were detained a day making some necessary repairs.

A fine field of wheat, which appeared to be ripe, extended down to the brink of the river opposite the spot where we lay. This belonged to the plantation of a farmer, recently from Virginia. From him we obtained a plentiful supply of milk, and some bacon hams. A portion of the bank had lately fallen into the river, and with it a part of the wheat field, and the dwelling house and other buildings seemed destined soon to follow.

The shore here was lined with the common elder, (sambucus canadensis) in full bloom, and the cleared fields were yellow with the flowers of the common mullien. This plant, supposed to have been originally introduced from Europe, follows closely the footsteps of the whites. The liatris pycnostachia, here called " pine of the prairies," which was now in full bloom, has a roundish tuberous root, of a warm somewhat balsamic taste, and is used by the Indians and others for the cure of gonnorrhœa.

The Indian interpreter, Mr. Dougherty, also showed us some branches of a shrub, which he said was much used among the natives in the cure of lues venerea. They make a decoction of the root, which they continue to drink for some time. It is called " blue wood" by the French, and is the symphoria racemosa of Pursh, common to the maritime states, the banks of the St. Lawrence, and the Missouri. It is here rather taller, and the branches less flexuous than in the eastern states. *

Without meeting any remarkable occurrences, we moved on from day to day, encountering numerous obstacles in the navigation of the river, and being occasionally delayed by the failure of some part of the steam-engine, till on the 2d of July, we arrived at Loutre Island, where we found Mr. Say and his companions.

After leaving the steam-boat at St. Charles, on the 25th of June, this party had travelled over a somewhat hilly country, covered with open oak woods for about ten miles, to a small creek, called the Darden, entering the Mississippi a few miles above the Illinois. This stream they crossed three miles from the Missouri, having in their walk suffered greatly

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* Baldwin.

from thirst. At evening they tied their pack-horse to a bush; and as they returned, after being absent a few minutes for water, the animal took fright, and breaking loose, disencumbered himself of his pack, and set off on a gallop to return to St. Charles; and it was not without great exertion that he was overtaken and brought back. They then pitched their tent, and were so fortunate as to find a house at the distance of half a mile. This belonged to a family from Carolina, and exhibited great appearance of neatness and comfort, but the owner was found particularly deficient in hospitality. He refused to sell or to give any refreshments for the use of the party, and even granted them some water with apparent reluctance, marching haughtily about his piazza, while some person was annoying his family by playing wretchedly on a flute. Mr. Say and the gentlemen of his party had on the fatigue dress of common soldiers, to which they probably owed the coldness of their reception. We are, however, glad to be able, from much experience, to say that there are few houses in the lately settled parts of the United States, where common soldiers would have met such a reception as was accorded by this Mr. N. to the gentlemen of the party. Want of hospitality is rarely the fault of the inhabitants of the remote settlements. Being refused refreshments, they returned to their camp, and with the addition of a hawk which they had killed, made a supper from the contents of their pack.

On the 27th they crossed the Perogue, about nineteen miles from St. Charles; and after a fatiguing march of several miles, were entertained at the house of a very worthy man, who supplied them with whatever his place afforded. From too long fasting, and from the effect of exposure and fatigue, Mr. Say and others became somewhat unwell; and on their account, the party remained at the house of their friendly host till evening, when they walked four miles to a place called Fort Kennedy. They purchased a ham, and a loaf of corn bread of Mr. Kennedy, paying ten cents per pound for the ham, and twenty-five cents for all the bread, milk, and corn, consumed during their stay.

The next morning, having travelled about seven miles, they halted for breakfast; and having fettered their horse, dismissed him to feed; but when sought for the purpose of continuing their journey, he could not be found. Two travellers at length arrived, and informed them that the horse had been seen at about six miles' distance, on the way towards St. Charles: a horse was therefore hired, and a person returned in pursuit; but he was not to be found, having proceeded on his journey previously to the arrival of the messenger.

The prairie flies (a species of tabanus,) are exceedingly troublesome to horses and cattle, insomuch that people who cross these grassy plains usually travel very early in the morning, and again at evening, resting greater part of the day; some, indeed, journey only by night. If they travel at all in the day, they have the precaution to defend the horse, by a covering thrown loosely over him. The tabani appear about the 10th of June, and are seen in immense numbers, until about the 10th of August, when they disappear. Near the farm houses we observed, that cattle, when attacked by them, ran violently among the bushes, to rid themselves of their persecutors.— Mosquitoes were not numerous.

As they were fearful of being unable to overtake the steam-boat on the Missouri, if they made a longer delay to prosecute the search for their horse, it was determined to abandon him altogether, rather than return to St. Charles, whither he had doubtless gone; accordingly, on the 29th of June, they made a division of their baggage, and each one shouldering his respective portion, proceeded towards the margin of Loutre Prairie. When they arrived here, they determined to take the most direct route towards the Missouri, as it seemed folly for them to attempt, in the drought and heat, which then prevailed, to cross the extensive plains of Loutre and the Grand Prairie with their heavy burthens. They therefore followed a path leading nearly south, along a naked ridge; where they travelled twelve miles, without finding water, and arrived at Loutre Island in the evening. They were all the day tormented with excessive thirst; and being unaccustomed to travelling on foot, they were much fatigued, and several became lame. The soil of the extensive prairies which they passed was not very good; but mixed at the surface with so much vegetable matter, accumulated by the successive growth and decomposition of the yearly products, as to give it the aspect of fertility.

On the south side of Loutre Prairie a well has been sunk sixty-five feet, without obtaining water; on the north water is readily found, by digging to a moderate depth. Loutre Prairie is twenty-three, and Grand Prairie is twenty-five miles in length: on the borders of each are some scattering settlements.

Near Loutre Island are several forts, as they are called by the inhabitants, built by the settlers during the late war, and designed to afford protection against the attacks of the aborigines, chiefly the Kickapoos, and Saukees, who were most feared in this quarter. They are simply strong log-houses, with a projecting upper story, and with loop-holes for musketry.

It was within a few miles of this place, that a company of mounted rangers, commanded by Captain Calloway, were attacked by the Indians. The assault commenced as the rangers were entering a narrow defile, near the confluence of the prairie forks of Loutre Creek. Several men were killed at the first fire, and Captain Calloway received in his body a ball that had passed through his watch. So furious was the onset, that there was no time for reloading their pieces after they had discharged them.

Captain Calloway threw his gun into the creek, that it might not add to the booty of the Indians; and though mortally wounded, drew his knife, and killed two of the assailants; but seeing no prospect of success he ordered a retreat, hoping thereby to save the lives of some of his men. He was the last to leave the ground; when springing into the creek he received a shot in his head, and expired immediately.

Loutre Island is something more than nine miles long, and about one mile wide, and is the residence of several families. Between it and the main land is an isthmus, which is left naked at times of low water. Loutre Creek enters at the lower end of the island. It is not navigable. Mr. Talbot, formerly from Kentucky, has been resident here for nine years. His farm is in a high state of cultivation, and furnishes abundant supplies of poultry, eggs, potatoes, and the numerous products of the kitchen garden, of which he sent a handsome present on board our boat. He informed us that peach-trees succeed well in the most fertile parts of the island.

The first dwellings constructed by the white settlers are nearly similar in every part of the United States. Superior wealth and industry are indicated by the number and magnitude of corn-cribs, smoke-houses, and similar appurtenances; but on the Missouri, we rarely meet with any thing occupying the place of the barn in the northern states. The dwellings of people who have emigrated from Virginia, or any of the more southern states, have usually the form of double cabins, or two distinct houses, each containing a single room, and connected to each other by a roof; the intermediate space, which is often equal in area to one of the cabins, being left open at the sides, and having the naked earth for a floor, affords a cool and airy retreat, where the family will usually be found in the heat of the day. The roof is composed of from three to five logs, laid longitudinally, and extending from end to end of the building; on these are laid the shingles, four or five feet in length; over these are three or four heavy logs, called weight poles, secured at their ends by withes, and by their weight supplying the place of nails.

They have corn-mills, consisting of a large horizontal wooden wheel, moved by a horse, and having a band passed round its periphery to communicate motion to the stone. These are called band-mills, and are the most simple and economical of those in which the power of horses is employed. The solitary planter, who has chosen his place remote from the habitation of any other family, has sometimes a mill of a more primitive character, called a hand-mill, probably differing little from those used among the ancient Egyptians. It consists of two stones; and while one person causes the uppermost to revolve horizontally upon the disk of the other, a second, who is usually a child or a woman, introduces the corn a few grains at a time, through a perforation in the upper stone. Some are content with the still ruder apparatus, consisting of an excavation in the top of a stump; into which the corn is thrown, and brayed with a pestle. This is the method in use among many of the agricultural Indians.

A large species of lampyris is common on the lower part of the Missouri. It is readily distinguished from the smaller species, the common fire-fly, by its mode of coruscating. It emits from three to seven or eight flashes, in rapid succession, then ceases; but shortly after renews its brilliancy. This species appears early in May. We saw many of them in returning by night from the Merameg to St. Louis; but before our arrival at Loutre Island they had disappeared, and were succeeded by great numbers of the lampyris pyralis, whose coruscations are inferior in quantity of light, and appear singly.

The black walnut attains, in the Missouri bottoms, its greatest magnitude. Of one, which grew near Loutre Island, there had been made two hundred fence-rails, eleven feet in length, and from four to six inches in thickness. A cotton-tree, in the same neighbourhood, produced thirty thousand shingles, as we were informed by a credible witness.

CHAPTER IV.

SETTLEMENT OF COTE SANS DESSEIN.—MOUTHS OF THE OSAGE. —MANITO ROCKS.—VILLAGE OF FRANKLIN.

THE left bank of the Missouri at the confluence of Loutre Creek is precipitous, terminating a group of hills which can be distinguished running far to the north-east. Towards the river these fall off in perpendicular precipices, whose bases are concealed in a dense growth of trees and underwood. From their summits huge masses of rock have fallen; and some of these are of such magnitude, that their summits rise above the surrounding forest. One standing opposite the head of the island next above Loutre, is marked with numerous rude drawings, executed by the Indians; some representing men with the heads of bisons, spears, arrows, bows, &c. Half a mile above this rock the Gasconade enters the Missouri from the south. The sources of this river are in the hilly country, near those of some of the larger tributaries of the Yungar fork of the Osage; its waters are transparent, and its current rapid. Traversing a rocky and broken country, it has not the uniformity of current common to many of the branches of the Missouri, but is varied by numerous cataracts and rapids, affording convenient stations for water-mills. Some saw-mills have already been erected; and from them a supply of pine-timber is brought to the settlements on the Missouri, that tree being rarely met with here, except in the hilly country. The Gasconade is navigable for a few miles. As might be expected, a projected town is placed at the confluence of this river and the Missouri, and is to be called Gasconade.

Above the Gasconade, the aspect of the shores of the Missouri is the same as below, except that the hills are discontinued on the left side, and make their appearance on the right, extending along eight or nine miles; above this both shores are low bottom grounds.

Having received on board Mr. Say and his companions, we left Loutre Island on the 3d of July; and passing in succession the mouths of the Gasconade, Bear Creek, the Au Vase, and other tributaries, we anchored on the evening of the 5th, above the little village of Cote Sans Dessein. This place contains about thirty families, mostly French, occupying as many small log cabins, scattered remotely along the left bank of the river. Nearly opposite the village is the lower mouth of the Osage. Just above the town is the elevated insular hill, which has given name to the place; it extends about eight hundred yards, parallel to the bank of the river, and terminates at a small stream called Revoe's Creek. Back of the hill is a marsh, discharging a small stream of water into the creek. The site of the settlement of Cote Sans Dessein is remarkable on account of the fertility of the soil, the black mould extending to the depth of about four feet. The soil is very rich for twenty or thirty miles, in the rear of the village; but the uncertainty of the titles, arising from the conflicting claims, founded on the basis of pre-emption, New Madrid grants, and the concession of a large tract opposite the mouth of the Osage, made by the Spanish authorities in favour of Mr. Choteau, still operates to retard the increase of population.

At the time of the late war the inhabitants of this settlement, relying on mutual protection, did not retire, but erected two stockades, and block-houses for their defence; the Sauks, assisted by some Foxes and Ioways, having by a feigned attack and retreat, induced the greater part of the men to pursue them, gained their rear by means of an ambuscade, and entering the village, raised their war-cry at the doors of the cabins. The women and children fled in consternation to the block-houses. At this juncture a young man was seen, who would not abandon his decrepid mother, even though she entreated him to fly and save his own life, leaving her, who could at best expect to live but a few days, to the mercy of the savages. The youth, instead of listening to her request, raised her upon his shoulders, and ran towards the stockade, closely pursued by the Indians. They fired several times upon him, and he must have been cut off had not a sally been made in his favour.

After killing the villagers who had fallen into their hands, the Indians proceeded to attack the lower stockade. The block-house at this work was defended by two men, and several women. On hearing the war-cry, this little but determined garrison responded to it in such a manner as to communicate to the Indians the idea that the block-house contained a considerable number of men. They, therefore, proceeded to the attack with caution. In the first onset, one of the two men received a mortal wound, which made him incapable of further exertion—the other continued to discharge the guns at the besiegers, they being loaded and put into his hands by the women. One mode of attack, adopted by the Indians, had nearly proved successful. They threw burning torches upon the roof, which was several times on fire; but the women, with admirable presence of mind, and undaunted intrepidity, ascended to the top of the building and extinguished the flames. This scene continued during the entire day; and at evening, when the assailants withdrew, a small portion only of the roof remained; so often had the attempt to fire the building been repeated. The loss sustained by the enemy was never correctly ascertained; it has since been stated by an Indian, that fourteen were killed and several wounded, but many are of opinion that two or three only were killed.

We saw the hero of this affair at the block-house itself, now converted into a dwelling; but he did not appear to be greatly esteemed, having perhaps few qualities except personal intrepidity to recommend him. Cote Sans Dessein contains a tavern, a store, a blacksmith's shop, and a billiard table.

The Cane* is no where met with on the Missouri; but its place is in part supplied by the equisetum hiemale, which, remaining green through the winter, affords an indifferent pasturage for horned cattle and horses: to the latter, it often proves deleterious. The inhabitants of St. Genevieve placed their horses upon an island covered with rushes, where great numbers of them shortly after died; but it was observed that such as received regularly a small quantity of salt remained uninjured. Of a large number of horses, placed on an island near the mouth of the Nishnebottona, to feed upon this plant, no less than twenty were found dead at the end of five days. May not the deleterious properties of the equisetum hiemale depend, in some measure, on the frozen water included in the cavity of the stalk?

We were told the cows on this part of the Missouri, at certain seasons of the year, give milk so deleterious as to prove fatal, when taken into the stomach; and this effect is commonly attributed to a poisonous plant, said to be frequent in the low grounds, where it is eaten by the cattle. They have a disease called the *milk sickness*: it commences with nausea and dizziness, succeeded by headache, pain in the stomach and bowels, and finally, by a prostration of strength, which renders the patient unable to stand; a general torpor soon ensues, succeeded by death. It is a common belief that the *flesh* of animals, that have eaten of this poisonous weed, is noxious, and that horses are destroyed by it.

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* Miegia macrosperma of Persoon.

We have heard it remarked by the inhabitants of the Ohio below the rapids, that the milk of cows running at large in August is poisonous; and this this they do not fail to attribute to the effect of noxious plants; and in some places they point out to you one, and in another place another vegetable, to which they assign these properties. The inhabitants generally seem to have no suspicion that milk, unless it is poisoned, can be an unwholesome article of diet; and we have been often surprised to see it given to those labouring under fever. Throughout the western states, and particularly in the more remote settlements, much use is made of butter-milk, and soured milk in various forms; all of which they sell to travellers. Below Cote Sans Dessein we paid, for new milk, twenty-five cents per gallon, and for soured milk, eighteen and three-fourth cents. At that place twenty-five cents per quart were demanded by the French settlers. It is commonly remarked that the French, as well as the Indians, who have been long in the immediate vicinity of the whites, charge a much higher price for any article than the Anglo-Americans, under the same circumstances. Emigrants from the southern states prefer sour milk; and the traveller's taste in this particular, we have often observed, forms a test to discover whether he is entitled to the opprobrious name of *Yankee,* as the people of the northern and eastern states rarely choose sour milk. We have found that in some of the sickliest parts of the valley of the Mississippi, where bilious and typhoid fevers prevail, through the summer and autumn, the most unrestrained use is made of butter, milk, eggs, and similar articles of diet. Dr. Baldwin was of opinion that the *milk sickness* of the Missouri did not originate from any deleterious vegetable substance eaten by the cows, but was a species of typhus, produced by putrid exhalations, and perhaps aggravated by an incautious use of a milk diet.

During the few days we remained at Cote Sans Dessein, Dr. Baldwin, though suffering much from weakness, and yielding perceptibly to the progress of a fatal disease, was able to make several excursions on shore. His devotion to a fascinating pursuit stimulated him to exertions for which the strength of his wasted frame seemed wholly inadequate; and it is not, perhaps, improbable that his efforts may have somewhat hastened the termination of his life.

Between Loutre Island and Cote Sans Dessein compact limestone occurs, in horizontal strata, along the sides of the Missouri valley. It is of a bluish white colour, compact structure, and a somewhat concoidal fracture, containing few organic remains. It alternates with sandstones, having a silicious cement. [13] These horizontal strata are deeply covered with soil, usually a calcareous loam, intermixed with decayed vegetable matter.

July 6th.—Soon after leaving the settlement of Cote Sans Dessein, we passed the upper and larger mouth of the Osage river. Here, to use the language of the country, a town has been *located*, and the lots lately disposed of at St. Louis at various prices, from fifty to one hundred and eighty dollars each. Within the limits of this town is a considerable hill, rising at the point of the junction of the two rivers, and running parallel to the Missouri. From its summit is an extensive view of the village of Cote Sans Dessein, and the surrounding country.

The river of the Osages, so called from the well-known tribe of Indians inhabiting its banks, enters the Missouri one hundred and thirty-three miles above the confluence of the latter river with the Mississippi. Its sources are in the Ozark mountains, opposite those of the White river of the Mississippi, and of the Neosho, a tributary of the Arkansa. Flowing along the base of the north-western slope of a mountainous range, it receives from the east several rapid and beautiful rivers, of which the largest is the Yungar, (so named, in some Indian language, from the great number of springs tributary to it,) entering the Osage one hundred and forty miles from the Missouri.

In point of magnitude the Osage ranks nearly with the Cumberland and Tennessee. It has been represented as navigable for six hundred miles; but as its current is known to be rapid, flowing over great numbers of shoals and sand-bars, this must be considered an exaggeration. In the lower part of its course it traverses broad and fertile bottom lands, bearing heavy forests of sycamore and cotton trees. We may expect the country along the banks of this river will soon become the seat of a numerous population, as it possesses in a fertile soil and a mild climate, advantages more than sufficient to compensate for the difficulty of access, and other inconveniences of situation.

The northern bank of the Missouri, for some distance above the confluence of the Osage, is hilly. Moreau's Creek enters three miles above; and at its mouth is Cedar Island, where we anchored for the night. This island is three miles long, and has furnished much cedar timber for the settlements below; but its supply is now nearly exhausted.

In the afternoon of the following day we were entangled among great numbers of *snags* and *planters*, and had a cat-head carried away by one of them. In shutting off the steam on this occasion, one of the valves was displaced; and as we were no longer able to confine the steam, the engine became useless, the boat being thus exposed to imminent danger. At length we succeeded in extricating ourselves; and came to an anchor near the entrance of a small stream, called Mast Creek by Lewis and Clarke.

At evening dense cumulostratus and cirrostratus clouds skirted the horizon : above these we observed a comet bearing north-west by north. Above the mouth of the Osage, the immediate valley of the Missouri gradually expands, embracing some wide bottoms, in which are many settlements increasing rapidly in the number of inhabitants. The Manito rocks, and some other precipitous cliffs, are the terminations of low ranges of hills running in quite to the river. These hills sometimes occasion rapids in the river, as in the instance of the Manito rocks; opposite which commences a group of small islands stretching obliquely across the Missouri, and separated by narrow channels, in which the current is stronger than below. Some of these channels we found obstructed by collections of floating trees, which usually accumulate about the heads of islands, and are here called rafts. After increasing to a certain extent, portions of these rafts becoming loosened, float down the river, sometimes covering nearly its whole surface, and greatly endangering the safety, and impeding the progress, of such boats as are ascending. The group above mentioned is called the Thousand Islands.

Nashville, Smithton, Rectorsville, and numerous other towns of similar character and name, containing from one to half a dozen houses each, are to be met with in a few miles above the Little Manito rocks. Almost every settler, who has established himself on the Missouri, is confidently expecting that his farm is, in a few years, to become the seat of wealth and business, and the mart for an extensive district.

The banks of the Missouri, in this part, present an alternation of low alluvial bottoms and rocky cliffs. Roche à Pierce Creek is a small stream entering nearly opposite another, called Splice Creek, a few miles above the Manito rocks. Here is a range of rocky cliffs, penetrated by numerous cavities and fissures, hence called by the French boatmen, Roche a Pierce, and giving name to the creek. These rocks we found filled with organic remains, chiefly encrinites. About eight or ten miles above this point the Missouri again washes the base of the rocky hills, which bound its immediate valley. The rocks advance boldly to the brink of the river, exhibiting a perpendicular front, variegated with several colours arranged in broad stripes. Here is a fine spring of water gushing out at the base of the precipice; over it are several rude paintings executed by the Indians. These cliffs are called the Big Manito rocks, and appear to have been objects of peculiar veneration with the aborigines, and have accordingly received the name of their Great Spirit.

It is not to be understood that the general surface of the country, of which we are now speaking, is traversed by continuous ridges, which, in their course across the valley of the Missouri, occasion the alternation of hill and plain; which to a person ascending the river, forms the most conspicuous feature of the country. The immediate valley of the Missouri preserves great uniformity in breadth, and is bounded on both sides by chains of rocky bluffs rising from one to two hundred feet above the surface of the included valley, and separating it from those vast woodless plains which overspread so great a part of the country. Meandering from right to left along this valley the river alternately washes the base of the bluffs on either side, while, from a person passing up or down the stream, the heavy forests intercept the view of the bluffs, except at the points where they are thus disclosed. Opposite the Big Manito rocks, and the island of the same name, is the Little Saline river, on the left side; and three or four miles above, on the opposite side, a stream called the Big Manito Creek. Here we passed the night of the 12th July. About midnight so violent a storm arose that we were compelled to leave our encampment on shore, the tent being blown down, and to seek shelter on board the boat. Though the storm did not continue long, the water fell to the depth of one inch and an half.

After taking in a supply of wood, we departed on the morning of the 13th, and the same day arrived at Franklin. This town, at present, increasing more rapidly than any other on the Missouri, had been commenced but two years and an half before the time of our journey. It then contained about one hundred and twenty log houses of one story, several framed dwellings of two stories, and two of brick, thirteen shops for the sale of merchandize, four taverns, two smiths' shops, two large team-mills, two billiard-rooms, a court-house, a log prison of two stories, a post-office, and a printing-press issuing a weekly paper. At this time bricks were sold at ten dollars per thousand, corn at twenty-five cents per bushel, wheat one dollar, bacon at twelve and a half cents per pound, uncleared lands from two to ten or fifteen dollars per acre. The price of labour was seventy-five cents per day.

In 1816 thirty families only of whites, were settled on the left side of the Missouri, above Cote Sans Dessein. In three years, their numbers had increased to more than eight hundred families.

The Missouri bottoms about Franklin are wide, and have the same prolific and inexhaustible soil as those below. The labour of one slave is here reckoned sufficient for the culture of twenty acres of Indian corn, and produces ordinarily about sixty bushels per acre, at a single crop. In the most fertile parts of Kentucky, fifteen acres of corn are thought to require the labour of one slave, and the crop being less abundant, we may reckon the products of agriculture there, at about one third part less than in the best lands on the Missouri. Franklin is the seat of justice for Howard county. It stands on a low and recent alluvial plain, and has behind it a small stagnant creek. The bed of the river, near the shore, has been heretofore obstructed by sand-bars, which prevented large boats from approaching the town; whether this evil will increase or diminish, it is not possible to determine; such is the want of stability in every thing belonging to the channel of the Missouri. It is even doubtful whether the present site of Franklin will not, at some future day, be occupied by the river, which appears to be at this time encroaching on its bank. Similar changes have happened in the short period since the establishment of the first settlements on the Missouri. The site of St. Anthony, a town which existed about thirteen years since, near Bon Homme, is now occupied by the channel of the river. Opposite Franklin is Boonsville, containing, at the time of our visit, eight houses, but having, in some respects, a more advantageous situation, and probably destined to rival, if not surpass, its neighbour.

Numerous brine springs are found in the country about Franklin. Boon's Lick, four miles distant, was the earliest settlement in this vicinity, and for some time gave name to the surrounding country. Some furnaces have been erected, and salt is manufactured, in sufficient quantities to supply the neighbouring settlements. Compact limestone appears to be the prevailing rock, but it is well known that the coal-beds, and strata of sand-stone, occur at a little distance from the river. [14] We visited one establishment for the manufacture of salt. The brine is taken from a spring at the surface of the earth, and is not remarkably concentrated, yielding only one bushel of salt to each four hundred and fifty gallons. Eighty bushels are manufactured daily, and require three cords of wood for the evaporation of the water. The furnace consists of a chimney-like funnel, rising obliquely along the side of a hill, instead of the vertical and horizontal flues, commonly used in these manufactories. The fire being kindled in the lower orifice of this, the ascent of the air drives the flame against forty or fifty iron pots, inserted in a double series; to these the water is conveyed by small pipes. The banks of the ravine in which this spring rises, still retain the traces of those numerous herds of bisons, elk, and other herbivorous animals, which formerly resorted here for their favourite condiment.

While at Franklin, the gentlemen of the exploring party received many gratifying attentions, particularly from Gen. T. A. Smith, at whose house they were often hospitably received, and where they all dined by invitation on the 17th of July. Here we met several intelligent inhabitants of the village, and of the surrounding country, from whose conversation we were able to collect much information of the character of the country, and the present condition of the settlements.

Mr. Munroe, a resident of Franklin, related to us, that being on a hunting excursion, in the year 1816, he remained some time on a branch of the Le Mine river, where he found the relics of the encampment of a large party of men, but whether of white troops, or Indian warriors, he could not determine. Not far from this encampment, he observed a recent mound of earth, about eight feet in height, which he was induced to believe must be a cachè, or place of deposit, for the spoils which the party, occupying the encampment, had taken from an enemy, and which they could not remove with them on their departure. He accordingly opened the mound, and was surprised to find in it the body of a white officer, apparently a man of rank, and which had been interred with extraordinary care.

The body was placed in a sitting posture, upon an Indian rush mat, with its back resting against some logs placed around it in the manner of a log house, enclosing a space of about three by five feet, and about four feet high, covered at top with a mat similar to that beneath. The clothing was still in sufficient preservation to enable him to distinguish a red coat, trimmed with gold lace, golden epaulets, a spotted buff waistcoat, finished also with gold lace, and pantaloons of white nankeen. On the head was a round beaver hat, and a bamboo walking stick, with the initials J. M. C. engraved upon a golden head, reclined against the arm, but was somewhat decayed where it came in contact with the muscular part of the leg. On raising the hat, it was found that the deceased had been hastily scalped.

To what nation this officer belonged, Mr. Munroe could not determine. He observed, however, that the button taken from the shoulder, had the word Philadelphia moulded upon it. The cane still remains in the possession of the narrator, but the button was taken by another of his party.

In relation to this story, Gen. Smith observed, that when he commanded the United States' troops in this department, he was informed of an action that had taken place near the Le Mine, in the Autumn of 1815, between some Spanish dragoons, aided by a few Pawnee Indians, and a war party of Sauks and Foxes. In the course of this action, a Spanish officer had pursued an Indian boy, who was endeavouring to escape with a musket on his shoulder, but who finding himself nearly overtaken, had discharged the musket behind him at random, and had killed the officer on the spot. The skirmish continuing, the body was captured, and recaptured several times; but at last remained with the Spanish party. This may possibly have been the body discovered by Mr. Munroe, but by whom it was buried, in a manner so singular, is unknown.

About the middle of July, the summer freshets in the Missouri began to subside at Franklin. On the

17th the water fell twelve inches, though in the preceding week more than two inches of rain had fallen. We were informed that the floods had continued longer this year, and had risen higher than usual, owing to the unusual quantities of rain that had fallen.

CHAPTER V.

DEATH OF DR. BALDWIN.—CHARATON RIVER, AND SETTLEMENT.—PEDESTRIAN JOURNEY FROM FRANKLIN TO FORT OSAGE.

Dr. Baldwin's health had so much declined that, on our arrival at Franklin, he was induced to relinquish the intention of ascending farther with the party. He was removed on shore to the house of Dr. Lowry, intending to remain there until he should recover so much strength as might enable him to return to his family. But the hopes of his friends, even for his partial recovery, were not to be realized. He lingered a few weeks after our departure, and expired on the thirty-first of August. His diary, in which the latest date is the eighth of August, only a few days previous to his death, shows with what earnestness, even in the last stages of weakness and disease, his mind was devoted to the pursuit, in which he had so nobly spent the most important part of his life. He has left behind him a name which will long be honoured;—his early death will be regretted not only by those who knew his value as a friend, but by all the lovers of that fascinating science, to which his life was dedicated, and which his labours have so much contributed to advance and embellish. We regret that it is not in our power to add to this inadequate testimony of respect, such notices of the life and writings of Dr. Baldwin, as might be satisfactory to our readers. His manuscripts were numerous, but his works were left unfinished. The remarks on the Rotbollia, published in Silliman's Journal, are his only productions, as far as we are informed, hitherto before the public. [15] His Herbarium, it is well known, has contributed to enrich the works of Pursh and Nuttall. He was the friend and correspondent of the venerable Muhlenbergh, and contributed materials for the copious catalogue of North American plants, published by that excellent botanist. In South America he met with Bonpland, the illustrious companion of Humboldt, and a friendly correspondence was established between them, which continued until his death. He had travelled extensively, not only in South America, but in Georgia, Florida, and other parts of North America. His notes and collections are extensive and valuable. During the short period of his connection with the exploring party, the infirmities, resulting from a long established and incurable pulmonary disease, then rapidly approaching its fatal termination, could not overcome the activity of his mind, or divert his attention entirely from his favourite pursuit. Though unable to walk on shore, he caused plants to be collected and brought on board the boat; and not disheartened by the many vexations attending this method of examination, he persevered, and in the course of the voyage from Pittsburgh to Franklin, detected and decribed many new plants, and added many valuable observations relating to such as were before known. To show the scope and accuracy of his method of observation, and for the gratification of the botanical reader, we subjoin a part of the observations registered in Dr. Baldwin's diary, from July 15th, the time of our departure from Cote Sans Dessein, to its conclusion. From this the reader will be able to form a satisfactory idea of the vegetable physiognomy of the country on this portion of the banks of the Missouri. [16]

Messrs. Say, Jessup, Seymour, and Dougherty, accompanied by Major Biddle, left Franklin on the 19th ot July, intending to traverse the country by land, to Fort Osage, where they proposed to await the arrival of the steam-boat. A pack-horse was purchased for the transportation of their baggage, and a tent, blankets, and provisions, furnished for their accommodation.

The party now remaining on board the steam-boat, consisted of Major Long, Major O'Fallon, Mr. Peale, and Lieutenants Graham and Swift. Having completed some repairs of machinery, and other necessary operations, which had occasioned a delay of six days at Franklin, we left that place on the same day, at four o'clock in the afternoon. The inhabitants of the village were assembled on the banks of the river to witness our departure, and signified their good wishes by repeated cheers and acclamations. The fuel we had taken on board, being of an indifferent quality, we were able to make small progress against the rapid current of the Missouri. We anchored, for the night, three miles above Franklin. Finding the valves, and other parts of the steam-engine, so much worn by the fine sand, suspended in the water of the river, as to become leaky, we were compelled to lie by, and were occupied for a day in making repairs. In the meantime the boat's crew were employed in taking on board a supply of dry mulberry wood, which is the best that the forests along the Missouri afford. The water in the river was now subsiding, and the rapidity of the current consequently diminishing; we did not, therefore, so much regret the necessary delays, as we might otherwise have done. Some of the party went out on the south-west side of the river, to search for game. Most of the deer, and larger animals, as well as the turkies, have fled from this part of the country, though it is but a few years since they were extremely abundant; they met, however, with a racoon, the Maryland arctomys, some small birds, and some interesting little animals. After leaving the river bottom, they passed some groves of small scattered oak trees, and bushes, and arrived at the margin of a wide grassy plain, which spread before them as unvaried, and apparently as boundless as the ocean, and which is said to extend uninterrupted, near three hundred miles, to the Arkansa.

At evening a soldier came on board the boat, who had been sent express from Colonel Chambers' command. He brought intelligence that the detachment had arrived within fifteen miles of Fort Osage, and that their provisions were nearly exhausted.

Charaton, where we arrived on the 22d, is a small village, its settlement having been commenced in the year 1817. It is, however, in a flourishing condition, and from the advantages of its situation, promises to become one of the most important towns on the Missouri. It does not stand immediately on the bank of the Missouri, but of the Charaton river, about seven hundred yards above its mouth. Charaton will be the depot of merchandize, for a large extent of fertile country, which lies towards the north and east. At this time, the settlement contained about fifty houses, and near five hundred inhabitants, on a spot where two years previous, no permanent habitation had been established. Such is the rapidity, with which the forests of the Missouri are becoming filled with an enterprising and industrious population.

Charaton river is seventy-five yards wide at its mouth, and navigable, at high water, one hundred and fifty miles. Half a mile from its confluence with the Missouri, it receives the Little Charaton, also a considerable stream, and navigable for many miles. The Charaton originates near the De Moyen river of the Mississippi, and traverses a country which is of great importance, both on account of the fertility of its soil, and its inexhaustible mines of coal. The Western Engineer, being the first steam-boat that had ever ascended the Missouri, above Charaton, great numbers of the settlers were attracted to the banks of the river, on both sides, to witness our progress. So numerous were the obstacles to be encountered, that many were of opinion our progress would soon be arrested. It sometimes happened, that mistaking the channel, we ran our boat aground in shoal places, and in some instances it was necessary to fall back, in order to extricate ourselves from these difficulties. In this way much time was consumed.

The expansions of the Missouri bottom above Franklin have, since their settlement, received distinctive names. We pass on the south the Chenai au Barre, Tabeau, Titesaw, and Miami bottoms; on the north, those of Charaton, Sugar-tree, and Grand river. These are wild and fertile plains, usually covered with heavy forests of cotton-wood, sycamore, ash, and sugar-maple, and partly encircled by the bluffs, rising abruptly, about to the elevation of the highest trees, thence sloping gradually to the prairies, the region of the Gramina, and the Cyperacæa.* Eighteen miles above Charaton is the entrance of Grand river, an important tributary to the Missouri from the north. This river is one hundred and fifty yards wide at its mouth, and is navigable for boats of small burthen, about two hundred miles. Its waters are transparent, except in times of high floods, and its current less rapid than that of the Missouri. There are no settlements on its banks, except at the mouth, where is a trading house, and the residence of a single family. The lands are, however, of a good quality, and the adequate supply of timber, and numerous springs of water, will ensure their speedy settlement. The Sauks, Foxes, and Ioways, hunt in the plains towards the sources of Grand river, where elk and deer are still numerous, and the latter dispose of their peltries to the traders on the Missouri.

The navigation of the Missouri, for a few miles above and below the mouth of Grand river, is supposed to be more difficult than at almost any other place, owing to the rapidity of the current, and the numerous sand-bars and snags. Two miles above the confluence is the channel called Grand river

Cut-Off, so thickly set with snags as to be almost impassable. The distance by the Cut-Off to the head of the island is three-fourths of a mile; by the course of the river to the same point it is six miles. We followed the old channel, which is much obstructed by trunks of trees and sand-bars, and after a few hours succeeded in ascending this dangerous pass. Compact limestone, and argillaceous sandstone, occur frequently along the Missouri, above the mouth of Grand river, and indications of coal are often met with. In a country affording but an insufficient supply of timber for the consumption of a dense population, these extensive beds of fossil coal will be considered of great value, and the necessities of the inhabitants will lead to their early exploration. Whenever the dominion of man is sufficiently established in these vast plains to prevent the annual ravages of fires, trees will spring up; but we may expect that before forests originating in this manner can arrive at maturity, the population along the banks of the Missouri will become so dense, as to require the greater part of the soil for the purposes of culture.

The beds of coal in this district lie horizontally, varying much in thickness, and occurring often at an elevation of a few feet above the surface of the water in the Missouri.

On the first of August we arrived at Fort Osage, one hundred and five miles above the mouth of Grand river. Here Mr. Say and his party had been some days encamped, having arrived on the 24th of July from their equestrian journey across the country from Franklin. After leaving that place on the 19th, they passed through a fine bottom on the left side of the river, closely covered with forests of oaks, elms, hackberry, walnut, the mulberry, the gleditschia, the guilandina, and the other trees common on the Missouri, for twelve miles, when they arrived at Arrow rock, where is a ferry by which they crossed the Missouri. In this walk they passed a field of corn, containing seven hundred acres. The ferry boat used at Arrow rock is one peculiarly adapted to the navigation of a rapid stream. It consists of two canoes, on which rests a platform, with a slight railing to prevent cattle from falling off.

Arrow rock is so called from its having been formerly resorted to, by the neighbouring Indians, for the stone used to point their arrows. It is a beautiful situation, and rises to considerable elevation above the water. From its summit is a pleasing view of the river, and near the base is a remarkable eddy, which, as they were crossing, whirled their ferry-boat entirely round. On the second day they left their encampment at an early hour, and travelled forward through plains where very few trees were to be seen. They turned off from the Osage trace, in which they had been travelling, and went eight miles to visit the salt-works, and some remarkable diggings, on the saline fork of the Le Mine. Here, at one establishment, one hundred bushels of salt are manufactured per week; eight men are employed, and one hundred and eighty gallons of water are evaporated to produce a bushel of salt.

Two miles from the confluence of the Camp Fork with the Saline, are the salt-works, and the residence of Mr. Lockhart, who received the detachment with much hospitality.

His works were not then in operation, but were sufficiently extensive for the manufacture of five hundred bushels of salt per week. Near his house are the *diggings* so often mentioned in this region as objects of curiosity. These are irregular, but very numerous excavations of little depth, but evidently the result of the united labours of many persons who were possessed of instruments of iron and steel, as no others could have penetrated, and removed the compact rocky soil, of which the points and brows of the hills are composed. These excavations occur frequently in an extent of two or three miles; and from the amount of labour which appears to have been expended on them, it has been thought by some, that several hundred men must have been occupied two or three years in digging them; but this is, doubtless, much overrated. Whoever were the labourers, it is probable their search was for the precious metals, though at present no indications of any metallic ores, except of a little iron, are perceptible about the diggings. Mr. Lockhart had sunk a shaft to the depth of twenty-two feet, but the appeances continued the same as at the surface.

After travelling forty miles from Arrow rock, for great part of the way through open plains, where the high grass and weeds rendered their progress difficult and laborious, they pitched their tent, on the evening of July 21st, on a branch of the Le Mine. Here they saw four Mississippi kites. The forks of the tail of this bird are so much elongated as to resemble some fortuitous appendage, for which, at first sight, they are often mistaken. Sandhill cranes, and flocks of prairie hens were also seen, but were so shy as not to be taken without much difficulty.

The country about the Le Mine is beautiful and fertile. The unaccustomed eye, in roving over those extensive undulating prairies, is beguiled by the alternation of forests and meadows, arranged with an appearance of order, as if by the labour of men, and seeks in vain to repose upon some cottage or mansion embosomed in the little copses of trees, or in the edge of the forest, which margins the small streams and ravines in the distance.

Their provisions being nearly exhausted, the detachment delayed a short time at their encampment on the Le Mine, to replenish their stock by hunting. This camp was near a place called the Grand Pass, a narrow neck of prairie between the timber of the Saline, and that of a small creek discharging directly into the Missouri. Here the Osage trace passes, and a little beyond falls into a waggon-road leading to the Tabeau settlement.

On the 22nd Major Biddle experienced a severe attack of cramp in the stomch, but soon found some relief from swallowing a quantity of ginger, the only medicine with which they were provided. On the following day they entered the forests of the Missouri bottom, and soon after crossed the Tabeau, where a town of the same name, at that time containing two houses, had been established. Tabeau is the name of a Canadian hunter, who formerly frequented this region. The creek is navigable to the site of the projected town, about one mile from the Missouri, having for this distance about six feet of water. Four miles from this place they crossed the Little Tabeau, and at evening pitched their tent on a stream called the Little Chenai au Barre, about a mile and a half from the Missouri. Here is a good mill seat. The Great and Little Chenai au Barre, are two creeks entering the Missouri about a mile and a half from each other. Before the mouths of these two creeks is a large island, the slough or *Chenai* dividing this island from the shore, received the additional name of Au Barre from a hunter known by that appellation, who was lost here for some time, successively ascending the two creeks, which he mistook for the Missouri; hence the name of Chenai au Barre island, Great and Little Chenai au Barre Creek, &c.

In the afternoon they halted to rest at the cabin of a hunter on Fire Prairie Creek, so called from the circumstance of three or four Indians having been burned to death by the sudden conflagration of the dry grass in the meadows at its source. Here Mr. Say had an opportunity to examine a young black wolf, which was confined by a chain at the door of the hut. These animals are common in this part of the country. This individual was one of five that had been taken from the same den. It had become familiar with the hunter and his family, but was shy towards strangers. When fed on meat the ferocity of his disposition manifested itself in attempts to bite the children. It was ordinarily fed on bread and milk.

This man had been settled here two years, but had not "made a crop," having subsisted himself and his family by hunting, wherein he had been very successful. In the preceding autumn he had killed seventy deer and fifty bears. He took great pleasure in relating his hunting adventures, particularly his engagements with bears. One bear which he had killed, he said, weighed seven hundred pounds; but in this instance he was probably mistaken. He had seen in the winter of 1818, a large herd of bisons near the Grand Pass; but they had been driven down by the severity of the weather, and were not ordinarily to be found within the limits of his hunting excursions. During the severe wintry weather, he affirmed that bears make for themselves a shelter of brushwood, into which they creep to secure themselves from the cold.

From May until July the female of the common deer conceals her young whilst she goes to feed. It is at this time that the hunters take advantage of the maternal feelings of the animal to secure their prey. They conceal themselves and imitate the cry of the fawn. The solicitude of the parent animal for her young overcomes her usual care for her own safety; and believing she hears the cries of her offspring in distress, she hurries toward the spot where the hunter lies concealed, and falls an easy prey. [17]

Mr. Say and his companions were very politely received by Col. Chambers, then at Fort Osage. The rifle regiment was encamped here, waiting the arrival of the contractor's boats.

Fort Osage was established in 1808, by Gov. Lewis. It stands on an elevated bluff, commanding a beautiful view of the river, both above and below. The works are a stockade, of an irregular pentagonal form, with strong log pickets perforated with loopholes; two block houses are placed at opposite angles; one of them, however, flanks one of its curtains too obliquely to be of much service in defending it. There is also a small bastion at a third angle. Within are two series of buildings for quarters, store-houses, &c. The position of the fort is not a secure one, on account of numerous ravines and declivities that would cover an enemy within a short distance; but is such, that boats ascending or descending the river must be exposed to its fire. The stream in the middle of the fire, and on the opposite side, is so remarkably rapid, that it is in vain to contend against it with the oar or paddle; it is, therefore, usually necessary for ascending boats to enter the eddy, which brings them within musket-shot of the fort.

At the time of our journey, Fort Osage, which, according to our estimate, is one hundred and forty-two miles, by the course of the river, above Charaton, was the extreme frontier of the settlements. For a great distance below, the establishments of the white settlers were confined to the immediate banks of the Missouri. The inhabitants of this frontier are mostly emigrants from Tennessee, and are hospitable to strangers. Many of them are possessed of considerable wealth. In the inhabitants of the new States and Territories there is a manifest propensity, particularly in the males, to remove westward, for which it is not easy to account. The women, having their attention directed almost exclusively to domestic pursuits, form local attachments, and establish habits, which are not interrupted without occasioning some disquietude. They are at first discontented in their new abode; in a few weeks they become reconciled, but less attached than to their former home; and, at length, by the habit of frequent migration, they acquire the same fondness for an adventurous unsettled life, as characterises the men.

Daniel Boon, whose history is connected with that of all the new settlements from Kentucky westward, answered to an inquiry concerning the cause of his frequent change of residence, " I think it time to remove when I can no longer fall a tree for fuel, so that its top will lie within a few yards of the door of my cabin" The charms of that mode of life, wherein the artificial wants and the uneasy restraints inseparable from a crowded population are not known, wherein we feel ourselves dependent immediately and solely on the bounty of nature, and the strength of our own arm, will not be appreciated by those to whom they are known only from description, though they never fail to make an impression upon such as have acquired a knowledge of them from experience. A settler on the Missouri observed to us, that the land he at present occupied was not better than that he had left in Tennessee; but he did not wish to spend all his life in one place, and he had learned from experience, that a man might live in greater ease and freedom where his neighbours were not very numerous.

A person upwards of sixty years old, who had recently arrived at one of the highest settlements of the Missouri, inquired of us very particularly of the river Platte, and of the quality of the lands about its source. We discovered that he had the most serious intention of removing with his family to that river. On the last day of July and the first of August, about two inches of rain fell: the prevailing winds were from the north-east; but the superior strata of the atmosphere carried clouds of different descriptions in different, and sometimes opposite directions. The moon, soon after rising, passed behind a long dense body of cirrus clouds, that floated over the eastern horizon. Long and distinct radii were soon after seen converging to a point fifteen or twenty of the moon's diameters to the eastward of its disk. Such is the refracting power of the aqueous vapors sometimes suspended in the atmosphere.

Horizontal strata of sandstone and compact lime stone, are disclosed in the cliffs on both sides the valley of the Missouri. These rocks contain numerous remains of caryophilla, productus, and terebratulae. [18]

Some days passed after our arrival at Fort Osage, before the weather admitted our making the astronomical observations necessary to ascertain its position. The mean of the results of several observations of the meridian altitude of the sun's lower limb gave 39° 9′ 33½″ north, for the latitude of the place.

CHAPTER VI.

MOUTH OF THE KONZAS.—ARRIVAL AT WOLF RIVER.—JOURNEY BY LAND FROM FORT OSAGE TO THE VILLAGE OF THE KOÑZAS.

Wishing to extend our examinations between Fort Osage and the Konzas river, also between that river and the Platte, a party was detached from the steamboat, with instructions to cross the Konzas at the Konza village, thence to traverse the country by the nearest route to the Platte, and to descend that river to the Missouri. The party consisted of Mr. Say, to whom the command was entrusted, Messrs. Jessup, Peale, and Seymour, Cadet Swift, Mr. J. Dougherty, and five soldiers. They were furnished with three pack-horses, and a supply of provisions for ten days. Thus organized and equipped, they commenced their march on the afternoon of August 6th, accompanied by Major Biddle and his servant.

After their departure, the steam-boat was delayed a few days at Fort Osage. On the ninth, a part of the troops destined for the Missouri service arrived in keel-boats. Colonel Chambers, with the principal part of his regiment, were still at Fort Osage, awaiting the arrival of supplies of provisions now daily expected.

On the following day we resumed our journey, and were accompanied about ten miles by Mr. Sibley, agent of Indian affairs, and his lady, to whom the gentlemen of the party were indebted for numerous hospitable attentions during their stay at Fort Osage; also by Captain Bissel, and Lieutenant Pentland, of the rifle regiment, who returned in a skiff. Our progress was much impeded by shoals and rapids in the river, but we succeeded in passing these without warping, and anchored at sunset, having ascended eighteen miles.

Between Fort Osage and the mouth of the Konzas river, a distance of about fifty-two miles, are many rapid places in the Missouri. We were able to ascend all these, except one, without towing. It was with some difficulty we supplied our furnace with wood of a suitable quality. The forests of the Missouri, though limited in extent, are deep and shady, and though the atmosphere is perceptibly less humid than in the forests of the Mississippi, fallen trees, whose wood is soft and porous like that of the linden and cotton tree, absorb much moisture from the ground. It was only when we were so fortunate as to find a dry mulberry, ash, or cotton-wood still standing, that we could procure fuel well adapted to our purpose. Much time was of necessity expended in cutting and bringing on board our supplies of this article, and the additional delay occasioned by the numerous obstacles to the easy navigation of the river, made our ascent somewhat tedious.

The mouth of the Konzas river was so filled with mud, deposited by the late flood in the Missouri, as scarcely to admit the passage of our boat, though with some difficulty we ascended that river about a mile, and then returning dropped anchor opposite its mouth. The spring freshets subside in the Konzas, the Osage, and all those tributaries that do not derive their sources from the Rocky Mountains, before the Missouri reaches its greatest fulness; consequently the waters of the latter river, charged with mud, flow into the mouths of its tributaries, and there becoming nearly stagnant, deposit an extensive accumulation of mud and slime. The Konzas river has a considerable resemblance to the Missouri; but its current is more moderate, and the water less turbid, except at times of high floods. Its valley, like that of the Missouri, has a deep and fertile soil, bearing similar forests of cotton-wood, sycamore, &c., interspersed with meadows; but, in ascending, trees become more and more scattered, and at length disappear almost entirely, the country, at its sources, being one immense prairie.

We sailed from the mouth of the Konzas on the 13th of August. Numerous sand-bars occur in the Missouri above that point, and these occasioned us some delay. The water having fallen several feet, we had less velocity of current to contend against, but found it more necessary to keep in the channel, and could not so often take advantage of the eddy currents below the points and along the shore.

A party of white hunters were encamped on the Missouri, not far above the Konzas. In the rudeness of their deportment and dress, they appeared to us to surpass the savages themselves. They are usually the most abandoned and worthless among the whites who adopt the life of wandering hunters: frequently they are men whose crimes have excluded them from society.

Eighteen miles above the Konzas river, and five above the Little Platte, is a large island, which, from its rhombic form, has received the name of Diamond island. The principal channel is on the north side. It is difficult to pass, being much obstructed by sand-bars. Four miles above this is a small group, called the Three Islands; and two miles further another cluster, known as the Four Islands, and by the French as the Isles des Parcs, or Field Islands. At each of these places, as in the neighbourhood of islands generally, the navigation is difficult.

The site of an old village of the Konzas, and the remains of a fortification erected by the French, were pointed out a few miles below Isle au Vache. This island, which lies about one hundred miles above Fort Osage, was the wintering post of Capt. Martin's detachment, destined to proceed in advance of the troops ordered to the Missouri. Captain Martin, with three companies of the rifle regiment, left Bellefontain in September 1818, and arrived at Isle au Vache in October, with the expectation of resuming his march as early in the following spring as the weather would permit. But not having received the necessary supplies of provisions as anticipated, they had been compelled to remain till the time of our arrival, subsisting themselves principally by hunting. Fortunately this part of the country afforded so much game, that a competent supply was easily obtained. Between two and three thousand deer, beside great numbers of bears, turkies, &c., had been taken. The arrival of the boats, laden with provisions, now furnished them the means of continuing their ascent, and they had the prospect of departing within a few days.

Previous to our departure from Fort Osage, Major O'Fallon, the Indian agent who accompanied us, had sent a messenger across the country by land to the Konzas nation of Indians, residing on the Konzas river, summoning their chiefs to a council, to be held at Isle au Vache, on the arrival of the Western Engineer. Agreeably to the message sent by an interpreter, the Indians had been expected on the 18th, but did not arrive until the 23d of August, having been absent, when the messenger reached their village, on a hunting excursion. As soon as they received the invitation, they repaired with all convenient speed to the appointed place, having sent runners before, to apprise us of their approach.

The interpreter, who returned with them, brought intelligence of the safe arrival of Mr. Say and his party, and of their kind reception at the Konza village. We were sorry to learn that Mr. Say had been in ill health, and had not entirely recovered.

On the 24th, the chiefs and principal men of the Konzas, to the number of one hundred and fifty, assembled under an arbour prepared for their reception. The Indian agent addressed them in a speech adapted to the occasion, setting forth the causes of complaint which they had given by their repeated insults and depredations upon the whites, giving them notice of the approach of a military force, of sufficient strength to chastise their insolence, and advising them to seize the present opportunity of averting the vengeance they deserved by proper concessions, and by their future good behaviour to conciliate those, whose friendship they would have so much occasion to desire.

The replies of the chiefs were simple and short, expressive of their conviction of the justice of the complaints made against them, and of their acquiescence in the terms of reconciliation proposed by the agent. There were present at this council one hundred and sixty-one Konzas, including chiefs and warriors, and thirteen Osages. The most distinguished men were Na-he-da-ba, or *Long Neck*, one of the principal chiefs. Ka-he-ga-wa-ta-ning-ga, *Little Chief*, second in rank. Shon-ga-ne-ga, who had been one of the principal chiefs, but had resigned his authority in favour of Ka-he-ga-wa-ta-ning-ga. Wa-ha-che-ra, *Big Knife*, a partizan or leader of war parties. Wom-pa-wa-ra, *He who scares all men*, more commonly known to the whites as Plume Blanche, or White Plume, a man rising rapidly in importance, and apparently destined to become the leader of the nation. In addition to the Indians, the officers of the garrison and a few gentlemen were present at the council. The ceremonies were commenced by a discharge of ordnance from the steam-boat; the flags were hoisted in their appropriate places, a council flag being placed near the chair occupied by the agent. The Indians appeared gratified at the displays made on the occasion, but their attention was more particularly aroused by the exhibition of a few rockets and shells, fired for their entertainment. At our departure, which, on account of the Indians, was delayed until the 25th of August, many of them were present, and manifested some surprise at witnessing the operations of the steam-boat.

It was thought advisable to make some addition to our force at Isle au Vache, as we should soon be in advance of the troops on the Missouri, and might be exposed to insults and depredations, from some of the numerous tribes of Indians. Accordingly, on application to Colonel Morgan, a boat and fifteen men, under the command of Lieutenant Fields, were detailed for this duty, and directed to regulate their movements agreeably to the orders of the commanding officer of the exploring expedition. These men were furnished with provisions for sixty days, and having embarked on board a keel-boat, called the General Smith, they sailed in company with the Western Engineer. A favourable wind springing up, we proceeded in the course of the day about twenty-three miles, and encamped at night near the entrance of a small stream, called Independence Creek. A little above, and on the south side of the river, is the site of an old Konza town, formerly called the village of the Twenty-four. Above Cow Island the Missouri is more serpentine in direction than below, and the difficulties of the navigation we found by no means diminished as we ascended. The bed of the river in many places is broad, and the water distributed into small channels separated by sand-bars. About fifty miles above Cow Island we passed a spot that had lately been occupied as a hunting camp by Captain Martin, who had been here to procure the requisite provisions for the subsistence of his party.

At the Yellow Banks we found the bluffs elevated about one hundred and fifty feet above the surface of the valley. Barometric observations, several times repeated, gave nearly the same result at some points below. One hundred and fifty feet may, therefore, be assumed as the medium depth of the immediate valley of the Missouri; its aggregate width, for the first five hundred miles above the Mississippi, may be estimated at about three miles. The corresponding appearances in the strata of the opposite sides of this valley, as well as its entire form and character, indicate it to have been formed by the river. But far more than that vast body of soil and of rocky strata, which formerly filled the space now occupied by the immediate valley of the river, has been removed by the Missouri. From the summit of the bluffs there is a sloping ascent towards the interior of the country; and it is probable the aggregate elevation of the great plains is not less than three hundred feet above the surface of the river. If we admit that this great valley, with its numerous ramifications, has resulted from the operation of currents, wearing down and transporting to the ocean the solid materials of the earth's surface, it would appear necessary still farther to acknowledge that this channel was once much deeper than at present, for we usually meet with thick alluvial depositions covering the rocks that line the bottom of the Missouri valley. The manifest tendency of the operation of the Mississippi, at this time, upon its valley, is to fill up rather than to excavate; but it may be doubted whether this is equally, or even to any degree, the case with the Missouri. The aggregate mass of alluvion within the valley of the Missouri is, undoubtedly, moving downwards, with considerable rapidity; for the quantity of earthy matter carried into the Mississippi is, at all times, very great. In their descent the alluvial substances are alternately deposited and swept away, as by the variations in the direction of the current any particular point is, from time to time, either exposed to, or sheltered from, the action of the stream.

About eighty-seven miles above Cow Island is the mouth of the Nodowa, a river of some importance, being about seventy yards wide, and navigable to some distance. It is not usually seen in passing, being concealed by the island called the Great Nodowa, which is about five miles long, and covered with heavy forests. The lands on the Nodowa are of an excellent quality.

On the 1st of September, we were under the necessity of remaining encamped near the mouth of Wolf river, that some repairs might be made to the steam engine. Here we sent out some persons to hunt, who after a short time returned, having taken a deer, a turkey, and three swarms of bees, which afforded us about half a barrel of honey. On the trees which margin the river, we frequently observed a fine species of squirrel, which possesses all the graceful activity of the common gray squirrel, as it leaps from bough to bough. [19] After our machinery was adjusted, we resumed our ascent, and had proceeded a short distance, when we were hailed from shore by Mr. Dougherty, who had accompanied Mr. Say's party across the country. We were not a little surprised at this unexpected meeting, and were apprehensive some disaster had befallen the detachment.

Mr. Dougherty being received on board, informed us that Mr. Peale, Mr. Swift, Mr. Seymour, Chaboneau the Indian interpreter, and one of the soldiers, were at a little distance in the rear, having accompanied him across the country, from Cow Island, where they had arrived five days after our departure. Mr. Say and Mr. Jessup had been left sick at Cow Island. We encamped immediately, to give those who were near an opportunity of joining us. It will now be necessary to return to the time of Mr. Say's departure from Fort Osage, and briefly to trace the progress of his detachment to the place where a rencontre with a war-party of Pawnees frustrated their design, and made it necessary for them to rejoin the steam-boat.

Mr. Say's detachment, consisting of twelve men and a boy, furnished with three pack-horses for the transportation of baggage, departed from Fort Osage on the evening of August 6th. Their route lay westward across the woodless plains about the sources of the Hay Cabin, Blue Water, and Warreruza Creek. The cliffs along the Blue Water are naked perpendicular rocks. In the vallies numerous Indian encampments occurred, which appeared not long since to have been occupied. These were most frequently seen at the points, where the streams making almost a complete circuit, and nearly enclosing a small tract of ground, afforded an important protection against the approach of an enemy. The prairies about the head waters of the Warreruza abound in game. Here ravens were first seen by the party, and numbers of large banded rattle-snakes were killed. The blowing flies swarmed in inconceivable numbers, attacking not only the provision of the party, but depositing their eggs upon the blankets, clothing, and even on the furniture of the horses. On the 11th of August they arrived at some elevated ridges, from which they overlooked an extensive country, and could trace the whole course of the Wahrengeho, or Full Creek, diverging slightly from the Konzas, and could readily perceive timber upon several of its head branches. The lands between the head waters of Full Creek and the Konzas are not so good as those about the sources of the Warreruza, and produce less timber. The settlement of this region will be much retarded on account of the want of trees, these being confined to the margins of the watercourses, while tracts of valuable soil, of many miles in extent, have not a single tree or bush upon them. The soil is, however, well adapted to the culture of some of our most valuable forest trees. The sugar-maple, and several of the most important species of carya, the oaks, the tulip-tree, and the linden, would unquestionably succeed.

In consequence of the excessive heat of the weather, the great fatigues of the party, and their constant exposure in the open plains, the health of several of them began to be impaired. The high and coarse grasses, which now covered the plains, greatly impeded their progress, and very rapidly destroyed their clothing and mockasins. Their journey was, therefore, slow and laborious. On the night of the 13th they encamped on the bank of the Konzas, having travelled some distance parallel to the course of that river. The next day several of the party, already much debilitated, began to be afflicted with dysentery; some accidents also occurred to retard their progress, and on that and the following day they advanced only two miles. On the 16th they marched about fifteen miles, and encamped on the bank of the Konzas. Being now in doubt as to the situation of the Konza village, and the illness of some of the party continuing, they determined to remain encamped, while some persons should be sent out to reconnoitre the country, and discover, if possible, whether that part of the river at which they had arrived, was above or below the village they designed to visit. The Konzas river, in this part, bears the closest resemblance to the Missouri, both in the turbulence and rapidity of its current, and the aspect of the country along its banks; it is, however, so shoal as at almost any point to admit of being forded without difficulty.

Willow islands, moving sand-bars, and *falling-in* banks, are as frequent as in the Missouri. The line of forest which skirts the banks, including the bed of the river, is about half a mile wide, but not entirely uninterrupted. The course of the river is remarkably serpentine, forming woodland points alternately on both sides.

After crossing and recrossing the river, and extending their search in every direction, they had the satisfaction at last to fall in with a beaten path leading up the river, and which their guide and interpreter was confident would conduct them to the Konza village.

On the morning of the 19th, they passed across a wide and fertile prairie to the Vermillion, a stream which enters the Konzas from the north-west. It is four feet deep, and about twenty yards wide. Here they halted in the middle of the day, and dined on the flesh of a black wolf, the only game they were able to procure.

About Vermillion Creek are some open forests of oak, not extending far on either side. The trees are from fifteen to twenty-five feet high, and from one foot to eighteen inches in diameter, standing at a considerable distance from each other.

On the day following, the Konza village was descried at a distance. The detachment immediately halted to arrange their dress, and inspect their fire-arms. This was thought the more necessary, as no party of whites had visited the village since a number of the Konzas had received a whipping at Isle au Vache, and it was a matter of doubt, whether the party would meet a friendly reception.

As they approached the village, they perceived the tops of the lodges red with the crowds of natives ; the chiefs and warriors came rushing out on horseback, painted and decorated, and followed by great numbers on foot. Mr. Say and his party were received with the utmost cordiality, and conducted into the village by the chiefs, who went before and on each side, to protect them from the encroachments of the crowd. On entering the village the crowd readily gave way before the party, but followed them into the lodge assigned to them, and completely and most densely filled the spacious apartment, with the exception only of a small space opposite to the entrance, where the party seated themselves on the beds, still protected from the pressure of the crowd by the chiefs, who took their seats on the ground immediately before them. After the ceremony of smoking with the latter, the object which the party had in view in passing through their territories was explained to them, and seemed to be perfectly satisfactory. At the lodge of the principal chief they were regaled with jerked bison meat and boiled corn, and were afterwards invited to six feasts in immediate succession. Chaboneau and the old Frenchman, who had been despatched from Fort Osage, to summon the Konzas to meet the agent at Isle au Vache, had arrived some days previous; but the nation being at that time absent on a hunting excursion, the interpreters, after reaching the village, had proceeded immediately into the plains in pursuit of them. At the time of the arrival of our detachment, the village was in confusion, the hunters having lately returned, and being then engaged in preparations for the journey to Isle au Vache. Two runners were despatched to give notice to Major O'Fallon, that his summons had been received; and at the same time the chiefs and principal warriors departed for the place appointed. Before his departure, the principal chief was careful to appoint a fit person to attend Mr. Say's party, and arrangements were made to promote their comfort and convenience, while they should remain at the village.

Many reports had been circulated among the Konzas respecting the invitation to council their chiefs had received. They were conscious of having recently offended, by firing on Major O'Fallon, and by insulting and plundering several soldiers of Captain Martin's command. For these offences they had been in some measure punished at the time, Major O'Fallon having returned their fire from his boat, and not entirely without effect, as was supposed; several also had been flogged by the orders of Captain Martin; yet they did not consider themselves secure from the vengeance of the whites. Many believed that at the time of the anticipated council, barrels of gunpowder were to be placed in the earth to destroy them at once. The two runners, who had been despatched, quarrelled before they had gone far; one saying, all the things that had been told them by the interpreters were lies, for which assertion he was struck to the ground by his companion. In this situation they were found by the advancing chiefs. Finally, a dispute happened between the chiefs themselves respecting rank, in consequence of which ten or twelve of them returned to the village.

Mr. Say, who spent some time among the Konzas, gives, in his notes, the following account of that nation:

"The approach to the village is over a fine level prairie of considerable extent; passing which, you ascend an abrupt bank of the height of ten feet to a second level, on which the village is situate in the distance, within about one-fourth of a mile of the river. It consists of about a hundred and twenty lodges, placed as closely together as convenient, and destitute of any regularity of arrangement. The ground area of each lodge is circular, and is excavated to the depth of from one to three feet, and the general form of the exterior may be denominated hemispheric.

"The lodge in which we reside is larger than any other in the town, and being that of the grand chief, it serves as a council-house for the nation. The roof is supported by two series of pillars, or rough vertical posts, forked at top for the reception of the transverse connecting pieces of each series; twelve of these pillars form the outer series, placed in a circle; and eight longer ones the inner series, also describing a circle; the outer wall, of rude frame-work, placed at a proper distance from the exterior series of pillars, is five or six feet high. Poles, as thick as the leg at base, rest with their butts upon the wall, extending on the cross-pieces, which are upheld by the pillars of the two series, and are of sufficient length to reach nearly to the summit. These poles are very numerous, and, agreeably to the position which we have indicated, they are placed all round in a radiating manner, and support the roof like rafters. Across these are laid long and slender sticks or twigs, attached parallel to each other by means of bark cord; these are covered by mats made of long grass, or reeds, or with the bark of trees; the whole is then covered completely over with earth, which, near the ground, is banked up to the eaves. A hole is permitted to remain in the middle of the roof to give exit to the smoke. Around the walls of the interior, a continuous series of mats are suspended; these are of neat workmanship, composed of a soft reed united by bark cord, in straight or undulated lines, between which lines of black paint sometimes occur. The bedsteads are elevated to the height of a common seat from the ground, and are about six feet wide; they extend in an uninterrupted line around three-fourths of the circumference of the apartment, and are formed in the simplest manner of numerous sticks, or slender pieces of wood resting at their ends on cross pieces, which are supported by short notched or forked posts, driven into the ground; bison-skins supply them with a comfortable bedding. Several medicine or mystic bags are carefully attached to the mats of the wall; these are cylindrical, and neatly bound up; several reeds are usually placed upon them, and a human scalp serves for their fringe and tassels. Of their contents we know nothing.

" The fire-place is a simple shallow cavity, in the centre of the apartment, with an upright and a projecting arm for the support of the culinary apparatus. The latter is very simple in kind, and limited in quantity, consisting of a brass kettle, an iron pot, and wooden bowls and spoons; each person, male as well as female, carries a large knife in the girdle of the breech cloth behind, which is used at their meals, and sometimes for self-defence. During our stay with these Indians they ate four or five times each day, invariably supplying us with the best pieces, or choice parts, before they attempted to taste the food themselves.

"They commonly placed before us a sort of soup, composed of maize of the present season, of that description which, having undergone a certain preparation, is appropriately named sweet corn, boiled in water, and enriched with a few slices of bison meat, grease, and some beans, and to suit it to our palates, it was generally seasoned with rock salt, which is procured near the Arkansa river.

"This mixture constituted an agreeable food; it was served up to us in large wooden bowls, which were placed on bison robes or mats, on the ground; as many of us as could conveniently eat from one bowl sat round it, each in as easy a position as he could contrive, and in common we partook of its contents by means of large spoons made of bison horn. We were sometimes supplied with uncooked dried meat of the bison, also a very agreeable food, and to our taste and reminiscence, far preferable to the flesh of the domestic ox. Another very acceptable dish was called *leyed corn*; this is maize of the preceding season *shelled* from the cob, and first boiled for a short time in a ley of wood-ashes until the hard skin, which invests the grains, is separated from them; the whole is then poured into a basket, which is repeatedly dipped into clean water, until the ley and skins are removed; the remainder is then boiled in water until so soft as to be edible. They also make much use of maize roasted on the cob, of boiled pumpkins, of musk-melons, and water-melons, but the latter are generally pulled from the vine before they are completely ripe.

"Ca-ega-wa-tan-ninga, or the Fool Chief, is the hereditary principal chief, but he possesses nothing like monarchical authority, maintaining his distinction only by his bravery and good conduct. There are ten or twelve inferior chieftains, or persons who aspire to such dignity, but these do not appear to command any great respect from the people. Civil as well as military distinction arises from bravery or generosity. Controversies are decided amongst themselves; they do not appeal to their chief, excepting for counsel. They will not marry any of their kindred, however remote. The females, before marriage, labour in the fields, and serve their parents, carry wood and water, and attend to the culinary duties; when the eldest daughter marries, she commands the lodge, the mother, and all the sisters; the latter are to be also the wives of the same individual. When a young man wishes to marry a particular female, his father gives a feast to a few persons, generally old men, and acquaints them with his design; they repair to the girl, who generally feigns an unwillingness to marry, and urges such reasons as her poverty, youth, &c.—the old men are often obliged to return six or seven times before they can effect their object. When her consent is obtained, the parents of the young man take two or three blankets and some meat to the parents of the female that they may feast, and immediately return to their lodge. The parents put on the meat to cook, and place the same quantity of meat and merchandize on two horses, and dress their daughter in the best garments they can afford; she mounts one of the horses, and leads the other, and is preceded by a crier announcing, with a loud voice, the marriage of the young couple, naming them, to the people; in this way she goes to the habitation of her husband, whose parents take from her every thing she brings, strip her entirely naked, dress her again in clothes as good as she brought, furnish her with two other horses, with meat and merchandize, and she returns with her crier to her parents. These two horses she retains as her own, together with all the articles she brings back with her. Her parents then make a feast, to which they invite the husband, his parents and friends; the young couple are seated together, and all then partake of the good cheer, after which the father of the girl makes a harangue, in which he informs the young man that he must now assume the command of the lodge, and of every thing belonging to him and his daughter. All the merchandize which the bride returned with, is distributed in presents from herself to the kindred of her husband in their first visit. The husband then invites the relatives of his wife to a feast. Whatever peltries the father possesses are at the disposal of the son to trade with on his own account; and in every respect the parents, in many instances, become subservient to the young man.

"After the death of the husband the widow scarifies herself, rubs her person with clay, and becomes negligent of her dress, until the expiration of a year. when the eldest brother of the deceased takes her to wife without any ceremony, considers her children as his own, and takes her and them to his house; if the deceased left no brother, she marries whom she pleases. They have, in some instances, four or five wives; but these are mostly sisters; if they marry into two families the wives do not harmonize well together, and give the husband much inquietude; there is, however, no restriction in this respect, except in the prudence of the husband. The grandfather and grandmother are very fond of their grandchildren, but these have very little respect for them. The female children respect and obey their parents; but the males are very disobedient, and the more obstinate they are, and the less readily they comply with the commands of their parents, the more the latter seem to be pleased, saying, 'He will be a brave man, a great warrior; he will not be controlled.'

"The attachment of fraternity is as strong, if not stronger, than with us. The niece has great deference for the uncle. The female calls her mother's sister *mother*, and her mother's brother *uncle.* The male calls his father's brother *father*, his father's sister *aunt,* his mother's sister *mother,* and his mother's brother *uncle.* Thirteen children have occurred in one family. A woman had three children at a birth; all lived.

"The young men are generally coupled out as friends; the tie is very permanent, and continues often throughout life.

"They bear sickness and pain with great fortitude, seldom uttering a complaint; bystanders sympathize with them, and try every means to relieve them. Insanity is unknown; the blind are taken care of by their friends and the nation generally, and are well dressed and fed. Drunkenness is rare, and is much ridiculed; a drunken man is said to be bereft of his reason, and is avoided. As to the origin of the nation, their belief is, that the Master of life formed a man, and placed him on the earth; he was solitary, and cried to the Master of life for a companion, who sent him down a woman; from the union of these two proceeded a son and daughter, who were married, and built themselves a lodge distinct from that of their parents; all the nations proceeded from them, excepting the whites, whose origin they pretend not to know. When a man is killed in battle, the thunder is supposed to take him up, they do not know where. In going to battle each man traces an imaginary figure of the thunder on the soil; and he who represents it incorrectly is killed by the thunder. A person saw this thunder one day on the ground, with a beautiful mockasin on each side of it; having much need of a pair, he took them and went his way; but on his return, by the same spot, the thunder took him off, and he has not been since heard of. They seem to have vague notions of the future state. They think that a brave warrior, or good hunter, will walk in a good path; but a bad man, or coward, will find a bad path. Thinking the deceased has far to travel, they bury with his body mockasins, some articles of food, &c.

to support him on the journey. Many persons, they believe, have become reanimated, who had been, during their apparent death, in strange villages; but as the inhabitants used them ill, they returned. They say they have never seen the Master of life, and therefore cannot pretend to personify him; but they have often heard him speak in the thunder; they wear often a shell which is in honour, or in representation of him, but they do not pretend that it resembles him, or has any thing in common with his form, organization, or dimensions.

"This nation having been at profound peace with the Osages, since the year 1806, (see Pike, p. 144.) have intermarried freely with them, so that in stature, features, and customs, they are more and more closely approaching that people. They are large and symmetrically well formed, with the usual high cheek bones, the nose more or less aquiline, colour reddish coppery, the hair black and straight. Their women are small and homely, with broad faces. We saw but a single squaw in the village who had any pretensions to beauty; she was recently married to an enterprizing warrior, who invited us to a feast, apparently in order to exhibit his prize to us. The ordinary dress of the men is a breech cloth of blue or red cloth, secured in its place by a girdle; a pair of leggings, made of dressed deer-skin, concealing the leg, excepting a small portion of the upper part of the thigh; a pair of mockasins made of dressed deer, elk, or bison-skin, not ornamented; and a blanket to cover the upper part of the body, often thrown over one arm in hot weather, leaving that part naked; or it is even entirely thrown aside. The outer cartilage of the ear is cut through in three places, and upon the rims, thus separated, various ornaments are suspended, such as wampum, string beads, silver or tin trinkets, &c. The hair of most of their chiefs and warriors is scrupulously removed from the head; being careful, however, to leave enough, as in honour they are bound to do, to supply their enemy with a scalp, in case they should be vanquished. This residuum consists of a portion on the back of the head, of about the breadth of the hand, rounded at its upper termination near the top of the head, the sides rectilinear, and nearly parallel, though slightly approaching each other towards the origin of the neck, where it abruptly terminates; on the exterior margin, the hair is somewhat longer and erect; this strip of hair is variously decorated; it is sometimes coloured on the margin with vermilion, sometimes a tail feather of the war eagle is attached transversely with respect to the head; this feather is white at base, and black at tip; but the principal ornament, which appears to be worn by some of their chief warriors, and which is, at the same time, by far the most handsome, is the tail of the common deer; this is attached by the base near to the top of the patch of hair, the back of it resting on the hair, and the tip secured near the termination of the patch; the bristly hair of the tail is dyed red by a beautiful permanent colour, and parted longitudinally in the middle by a broad silver plate, which is attached at top, and suffered to hang loose. Many of them are tattooed on different parts of the body. The young boys are entirely naked, with the exception of a girdle, generally of cloth, round their protruding abdomen. This part of the body in the children of this nation is remarkably prominent; it is more particularly so when they are very young, but gradually subsides as they advance in age. In hot weather the men, whilst in the village, generally use fans, with which they cool themselves, when in the shade, and protect their heads from the sun whilst walking out; they are made of the wing or tail of the turkey. The women rarely use them. The dress of the female is composed of a pair of mockasins, leggings of blue or red cloth, with a broad projecting border on the outside, and covering the leg to the knee, or a little above; many, however, and perhaps almost a majority of them, do not in common wear this part of the dress. Around the waist, secured by a belt or cestus, is wrapped a piece of blue cloth, the sides of which meet, or come nearly in contact on the outside of the right thigh, and the whole extends downward as far as the knee, or to the mid-leg; around the left shoulder is a similar piece of cloth, which is attached, by two of the corners, at the axilla of the right arm, and extends downward as far as the waist. This garment is often laid aside, when the body, from the waist upward, is entirely exposed. Their hair is suffered to grow long; it is parted longitudinally on the top of the head, and flows over the shoulders, the line of separation being coloured with vermilion. The females, like those of other aborigines, cultivate the maize, beans, pumpkins, and water-melons; gather and prepare the two former, when ripe, and pack them away in skins, or in mats, for keeping; prepare the flesh of the bison, by drying, for preservation; attend to all the cooking; bring wood and water; and in other respects manage the domestic concerns, and appear to have over them absolute sway. These duties, as far as we could observe, they not only willingly performed as a mere matter of duty, but they exhibited in their deportment a degree of pride and ambition to acquit themselves well; in this respect resembling a good housewife amongst the civilized fair. Many of them are tattooed.

"Both sexes of all ages bathe frequently, and enter the water indiscriminately. The infant is washed in cold water soon after its birth, and the ablution is frequently repeated; the mother also bathes with the same fluid soon after delivery. The infant is tied down to a board, after the manner of many of the Indian tribes.

"The chastity of the young females is guarded by the mother with the most scrupulous watchfulness, and a violation of it is a rare occurrence, as it renders the individual unfit for the wife of a chief, a brave warrior, or good hunter. To wed her daughter to one of these, each mother is solicitous; as these qualifications offer the same attractions to the Indian mother as family and fortune exhibit to the civilized parent.

" The men carefully pluck from their chins, axilla of the arms, eye-brows, &c. every hair of beard that presents itself: this is done with a spiral wire, which, when used, is placed with the side upon the part, and the ends are pressed towards each other so as to close the spires upon the hairs, which can then be readily drawn out; this instrument we observed to be an article of dress of the chiefs, who departed to attend the council at the Isle au Vache."

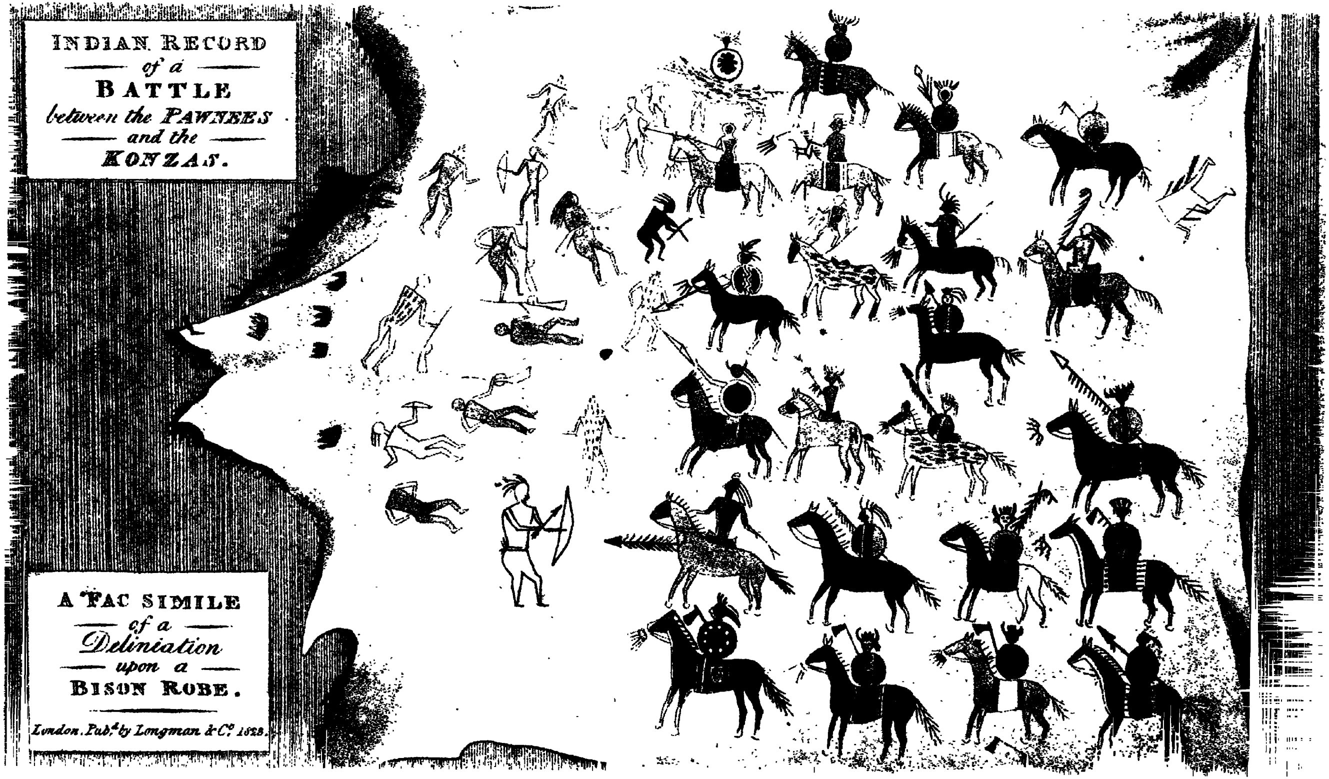
CHAPTER VII.

FURTHER ACCOUNT OF THE KONZA NATION. — ROBBERY OF MR. SAY'S DETACHMENT BY A WAR-PARTY OF PAWNEES. — ARRIVAL AT THE PLATTE.

THE Konza warriors, like those of some others of the Missouri tribes on their departure on a war excursion, sometimes make vows, binding themselves never to return until they have performed some feat which they mention, such as killing an enemy, striking an enemy's dead body, or stealing a horse. An instance lately occurred of a warrior who had been long absent under a vow of this sort, and finding it impossible to meet an enemy, and being in a starving condition, he returned to his own village by night, with the determination of accomplishing his vow, by killing and scalping the first person he should meet. This person happened to be the warrior's own mother, but the darkness of the night prevented the discovery until he had accomplished his bloody purpose.

On the 23d of August, Mr. Say's party began to prepare for leaving the Konza village, where they had been treated with much hospitality. They purchased a number of articles for their use on the journey they proposed to take, such as jerked bison meat, pounded maize, bison fat put up like sausages, mockasins, leggings, spoons made of the horn of the bison, two large wooden dishes, &c. They received also an addition to their cavalcade of two horses, one belonging to Major O'Fallon, and another which they procured from a Frenchman residing in the village.

A Pawnee prisoner, an interesting young man,



INDIAN RECORD
of a
BATTLE
between the ***PAWNEES***
and the
KONZAS.

A FAC SIMILE
of a
Delineation
upon a
BISON ROBE.

London. Pub.^{d} by Longman & C.^{o} 1823.

was brought to them, who said he was desirous to accompany them to his nation, but at the same time was afraid his people would not recognize him, and would kill him for a Konza. He was promised protection, but at the same time it was remarked to him, that if he should attempt to steal the horses of the party on the way, they would certainly pursue him and take his scalp.

On the 24th, says Mr. Say, having been detained until afternoon in searching for our horses, we departed, accompanied by several Indians, who intended to pass the night with us and to return to the village the following morning.

Our path led along the margin of Blue Earth Creek, a stream of the width of twenty-five yards, and greatest depth of three feet, which discharges into the river a mile or two above the Konza village. The soil supports but a thin growth of grass, and the timber is far from abundant, consisting principally of different sorts of oak, confined to the margin of the creek, its ravines and tributaries. One of our Indian followers, who, although a chief of the extinct Missouri nation, has yet much influence with the Konzas, wished to exchange a horse he had with him for one of ours, which was evidently a less valuable animal. The reason he assigned in explanation of his desire of such an apparently disadvantageous exchange was, that his horse had been presented to him by a person, who, he feared, intended to reclaim him, but that if he should exchange him for another horse, he would be secure in the possession of the individual so obtained, as an Indian will not reclaim a present which is not identically the same he had given. At the distance of seven miles from the village, our party encamped by the side of the creek, in a narrow, but beautiful and level prairie bottom, which was bounded by an abrupt, though verdant range of bluffs.

Mr. Dougherty and one of the Indians went in quest of game, and having supplied the two remaining Indians with a pipe and tobacco, we were partaking of some refreshment, when one of the party suddenly drew our attention to an extensive cloud of dust, which arose from the plain, and which we soon perceived but partially concealed a body of Indians, who had already approached within a quarter of a mile, and were now running with great swiftness. Our Indian followers now displayed all their activity; the chief seized his gun, and ran towards the advancing multitude to obtain his horse, which he mounted and rode off at full speed, whilst his companion disappeared in the bushes in an instant. This was a sufficient intimation that a hostile party was before us, and a timely admonition of the approach of danger. Our men were therefore drawn up in a line, and all prepared themselves for defence in case of extremity.

The advancing party were armed, decorated, and painted, for battle, but they manifested, as they rushed up to us, the most pacific deportment, shaking us by the hand, putting their arms about our necks, and raising their hands with the palm towards us, in token of peace. We were not, however, disposed to rely upon these assurances of friendship, being fully aware of the difficulties which their partizans would have to surmount in checking the inconsiderate prowess of the younger warriors. We now observed some of them seizing our horses, which were staked at some distance: they mounted them and rode swiftly in the direction that the chief had taken, but they soon returned. It soon became necessary to protect our baggage by arranging ourselves around it; still, however, in despite of our vigilance, many of our small articles were stolen. They begged for whiskey and tobacco; and a small portion of the latter was given them. Amidst the confusion arising from the incessant and rapid movements of the Indians, we observed an individual bearing off a small package of very fine pounded meat; I immediately pointed out the circumstance to the partizan, and directed him to recover it and punish the thief; he complied by wresting the meat from the grasp of the latter, and from that of several others who had been contending for portions of it, placed it beneath his feet, and defended it with his lance; but Chabonneau, to whom the meat belonged, declaring that he had given it to them, they were permitted to retain it. A tent which had been pitched for me in consideration of my illness, and in which my blanket, pistols, together with some small articles, had been deposited, was plundered of its contents; it was finally cut down, and would have been taken away, had we not made an effort to preserve it. During the whole transaction those warriors, who stood at a short distance, intently watched our movements, as if they were led to believe, from the attitude we assumed, that we would attempt to repel them, even with our inadequate force. No sudden action or motion of any one of the party escaped them; and individuals were frequently observed to draw their arrows to test the elasticity of the bows. At a critical juncture, a tall and graceful Indian cocked his gun fiercely, and put his war whistle to his mouth, but the signal was not blown. Amongst numerous incidents that occurred during the half hour that we were surrounded by them, an individual attempted to seize a knapsack belonging to one of the soldiers, and immediately under his observation; the latter placed his foot upon the knapsack to detain it, and at the same time prepared his gun as if to shoot the offender, who leaped backward with great agility, and with an ejaculation of pleasure, drew his arrow to the head. The whole party precipitately retreated just as Mr. Dougherty returned from hunting; being briefly informed of the nature of their visit, he called aloud to the fugitives in their own language, but they passed on without heeding him, taking our horses with them. I had by a rough estimate fixed their number at one hundred and forty; they were chiefly armed with the bow and arrow, and lance, with the usual accompaniments of tomahawks, war-clubs, and knives, together with a few guns. Fortunately no personal indignity was offered us; yet we could not repress a sensation of much mortification at the prospect of a frustration of our enterprise, which now seemed inevitable, and of extreme vexation at the irreparable loss of our horses, which no exertions of ours could have saved: an appeal to arms, except in the last extremity, would have been the height of imprudence, conquest being hopeless, and escape almost impossible.

Soon after their departure Mr. Jessup and Chabonneau set out for the village to procure assistance, for the purpose of removing our camp to that place from which we recommenced our journey at a moment so unpropitious; whilst we busied ourselves in removing the baggage to a situation amongst the neighbouring bushes, which appeared favourable for concealment, and for defence, in case of a night attack, which was confidently anticipated. Several alarms occurred during the night, and on the return of day we observed thirty mounted Indians riding swiftly towards us. The chief, who left us so precipitately the preceding evening, on his arrival at the village, hastily assembled a little band of warriors for the purpose of returning immediately to our assistance, and it was he and his party, that we had now the pleasure to greet. They expressed great satisfaction, when they learned that we were all uninjured. After saluting us cordially, they pursued the trail of the Pawnees for some distance, and from the footsteps in the grass, and other appearances, to be duly appreciated only by the eye of an Indian, they estimated the number of the Pawnees at one hundred and thirty. On their return they restored to us some bacon and other articles, which had been carried off by the fugitives, and rejected as not at all to their taste. We were now supplied with a conveyance for ourselves and our baggage, and were conducted back to the village.

The Indians who committed this robbery, were a war-party of the republican Pawnees, and were about one hundred and forty in number. Their nation was at war with the Konzas.

Mr. Say's party were kindly received at the village they had left on the preceding day. In the evening they had retired to rest in the lodge set apart for their accommodation, when they were alarmed by a party of savages rushing in, armed with bows, arrows, and lances, shouting and yelling in a most frightful manner. The gentlemen of the party had immediate recourse to their arms; but observing that some squaws, who were in the lodge, appeared unmoved, they began to suspect that no molestation to them was intended. The Indians collected around the fire in the centre of the lodge, yelling incessantly; at length their howlings assumed something of a measured tone, and they began to accompany their voices with a sort of drum and rattles. After singing for some time, one who appeared to be their leader, struck the post over the fire with his lance, and they all began to dance, keeping very exact time with the music. Each warrior had, besides his arms, and rattles made of strings of deer's hoofs, some part of the intestines of an animal inflated, and enclosing a few small stones, which produced a sound like pebbles in a gourd shell. After dancing round the fire for some time, without appearing to notice the strangers, they departed, raising the same wolfish howl, with which they had entered; but their music and their yelling continued to be heard about the village during the night.

This ceremony, called the *dog dance*, was performed by the Konzas for the entertainment of their guests. Mr. Seymour took an opportunity to sketch the attitudes and dresses of the principal figures. [See the annexed plate.]

Finding it impracticable to obtain horses by purchase, out of their almost exhausted stock of merchandize, to enable them to prosecute their march to Council Bluff, after due deliberation, they saw no alternative, but to endeavour to hire horses on credit, and to make the best of their way for Cow Island, in hopes of meeting the steam-boat there. A Frenchman, Mr. Gunville, resident with this nation, agreed to furnish two pack horses, and a saddle horse for Mr. Say, whose state of health would not admit of his continuing the journey on foot. Thus furnished they prepared to depart, and in the meantime two runners were despatched to inform Major Long of their situation by letter.

On the 25th of August, Mr. Say and his party again left the Konza village, accompanied by the French trader, who had furnished them two horses, and by a Missouri Indian; but this last had followed them only a few miles, when he repented of his undertaking and returned.

In pursuing the most direct route from the Konza village to the Missouri, they crossed at the distance of seventeen miles, the Vermilion, a small stream bordered with handsome forests. Nineteen miles beyond this they arrived at the sources of Grasshopper Creek, where they encamped on the evening of the 27th. Here the soil changes somewhat abruptly. The high prairies about the Vermilion and Blue Earth creeks are barren, almost naked, and inhabited by some orbicular lizards. About Grasshopper Creek the soil is fertile, the grass dense and luxuriant.

On the 29th they arrived at Isle au Vache, and were hospitably received by Colonel Morgan and the officers of his command, but had the mortification to learn that Major Long, after waiting a sufficient time to enable the Indian agent to complete his negotiations with the Konzas, had departed with the steam-boat before the arrival of the messengers, that had been sent to notify him of their disaster. These runners had been despatched immediately after their arrival, with instructions to overtake the steam-boat, and to deliver Mr. Say's letter, but after some days they returned, without having been able to effect any thing.

It was now determined that Mr. Say and Mr. Jessup, who on account of ill health, were unable to travel farther on foot, should for the present remain at Isle au Vache, while the other gentlemen of the detachment should continue their journey. Mr. Dougherty, from his intimate acquaintance with the the country, was of opinion that by crossing in the nearest direction from Isle au Vache to the mouth of Wolf river, they might yet overtake the steam-boat. They accordingly placed themselves under his guidance, and, by great exertion, fortunately arrived at the mouth of Wolf river, on the evening of the 1st of September, as the steam-boat was passing.

The country south-west of the Missouri, between the Konzas and the Platte, is drained principally by Wolf river and the Great Nemahaw. These rivers, like the Nodowa and Nishnebottona, which enter the Missouri nearly opposite them from the north-east, rise in the prairies at an elevation probably of forty or fifty feet above the level of the Missouri. As they descend, their vallies becoming gradually wider, embosom a few trees, and at length, near their entrance into the Missouri valley, are forests of considerable extent. The surface of these prairies presents a constant succession of small rounded hills, becoming larger and more abrupt as you approach the beds of the rivers. The soil is deep, reposing usually on horizontal beds of argillaceous sandstone, and secondary limestone. In all the limestones along the Missouri, we observe a tendency to crystalline structure, and they have often a reddish or yellowish white colour. There is, however, always something in the arrangement and in the aspect of the crystals to distinguish these sparry varieties from the primitive granular limestone, to which they have something of general resemblance. The horizontal disposition of the strata of this limestone, the great numbers of organic relics contained in it, and its intimate connexion with coal strata, indicate with sufficient clearness its relation to the secondary rocks. No person who shall examine this stratum with the least attention, either about the Nemahaw and the Konzas, or in the mining district at the sources of the Gasconade, the Merameg, and the St. Francis, will for a moment mistake it for any of those varieties of transition or primitive limestone, which it in some respects so closely resembles. The crystalline varieties, no less than the compact blue limestones, embrace numerous masses of chert or hornstone. This occurs of various colours, and these are arranged in spots or stripes. Some specimens have several distinct colours arranged in zigzag lines, somewhat resembling the fortification agate. The hunters use fragments of this stone for gun-flints; the savages also formerly employed it in the manufacture of arrow points and other implements. *

The soil superimposed upon these strata of limestone, is a calcareous loam. Near the rivers it is intermixed with sand; this is also the case with the soil of the high prairies about the Konzas village. In ascending the Konzas river, one hundred, or one hundred and twenty miles from the Missouri, you discover numerous indications, both in the soil, and its animal and vegetable productions, of an approach to the borders of that great Sandy Desert, which stretches eastward from the base of the Rocky Mountains. You meet there with the orbicular lizard, or "horned frog," an inhabitant of the arid plains of

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* Jessup's MS. Report.

New Mexico. You distinguish also some cacti, as well as many of those plants allied to chenopodium and salsola, which delight in a thirsty muriatiferous soil. The catalogue of the forest trees belonging to the vallies of this region is not very copious. The cotton-wood and the plane tree, every where form conspicuous features of the forests. With these are intermixed the tall and graceful acacia, the honey locust, and the bonduc, or coffee-tree, [20] and several species of juglans, carya and fraxinus, with pinnated or many-parted leaves. Trees of the family of the coniferæ are not of frequent occurrence on the Missouri. About the summits of rocky cliffs are here and there a few cedars or junipers, the only trees that retain their verdure during the winter.

The prairies, for many miles on each side of the Missouri, produce abundance of good pasturage; but as far as our observation has extended, the best soil is a margin from ten to twelve miles in breadth, along the western bank of the river. In the summer very little water is to be found in the prairies, all the smaller streams failing, even though the season be not unusually dry. On account of the want of wood and of water, the settlements will be for a long time confined to the immediate vallies of the Missouri, the Konzas, and the larger rivers; but it is probable, forests will hereafter be cultivated in those vast woodless regions, which now form so great a proportion of the country; and wells may be made to supply the deficiency of running water.

We have seen at Bellefontain, as well as at several other points on this river, a pretty species of sparrow, which is altogether new to us; [21] and several specimens of a serpent have occurred, which has considerable affinity with the pine-snake of the southern states, or bull-snake of Bartram. [22]

Having received on board the detachment that had arrived from the Konza village, except Messrs.

Say and Jessup, who, on account of ill health, remained at Isle au Vache, we left the mouth of Wolf river on the 2nd of September. A party of hunters, furnished with a horse for the transportation of game, were despatched at the same time with instructions to hunt on the south side of the river, and to join us again in the evening. We had little difficulty in procuring a constant supply of venison. Deer are very numerous on this part of the Missouri, and we had several opportunities to kill them from on board, as they were swimming across the river.

Twenty-one miles above the mouth of Wolf river, and on the same side, is the entrance of the Grand Nemahaw, a considerable river which rises in the plains between the Platte and the Republican Fork of the Konzas river, and running eastwardly about one hundred and fifty miles, discharges into the Missouri a little north of latitude forty degrees. In the *straightness of its course, the rapidity and turbulence of its stream, it has a general* resemblance to the other western tributaries of the Missouri. A few miles above the Nemahaw, and on the opposite side, is the mouth of the Tarkio, a smaller stream.

On the 4th of September we were joined by the hunters, who brought two deer, and informed us they had killed several others. Lieutenant Field's boat was allowed to remain at the encampment of the preceding night, after the departure of the steamboat, for the purpose of taking on board a large quantity of honey. Swarms of bees were found here in great numbers, and the honey they afforded made a valuable addition to our provisions, consisting now in a great measure of hunters' fare.

Finding one of the valves of the steam-engine much worn and leaky, we were now under the necessity of stopping for a day to have a new one, which we had brought, adapted to its place. Several of the men amused themselves by hunting and fishing.

We had now a plentiful supply of game, and many large catfish were taken, some of them weighing more than fifty pounds.

We passed in succession the mouths of the Nishnebottona and the Little Nemahaw, and arrived on the 7th at the Grand Pass. Here the Nishnebottona, a beautiful river about sixty yards wide, approaches within one hundred and fifty yards of the Missouri, being separated from it by a sandy prairie, rising scarcely twenty feet above the surface of the water. After pursuing for a short distance a parallel course, the two rivers diverge, and the Nishnebottona meanders along the side of the Missouri valley, about sixty miles to its confluence with the latter river. From this point is a pleasing view of the hills called the Bald-pated Prairie, stretching along the north-eastern side of the Nishnebottona, and diminished to the size of ant-hills in the distant perspective. Here the navigation is much obstructed by sand-bars, and the ordinary current of the Missouri, according to the statement of Lewis and Clarke, corroborated by our observation, is something more than one fathom per second.* In many places the Missouri hurries across concealed sand bars and other obstructions, with the velocity of seven, eight, or even twelve feet in a second. [23] Between these obstructions, the channel becomes deeper, and the current more moderate; consequently the aggregate velocity at times of low water may be reckoned something less than six feet to the second. As the volume of water is increased by the heavy rains, and the melting of the snows within the Rocky Mountains, the current is proportionably accelerated, and becomes more equable, running for many miles in succession, not less than seven hundred and twenty feet per minute. At the time of our ascent the summer floods had not entirely subsided, and in contending against the current, we found occasion in a few instances to make use of the towing rope.

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* Lewis and Clarke, vol. i. p. 28.

About thirteen miles above the Grand Pass is a point where Lewis and Clarke witnessed the falling of a portion, about three-fourths of a mile in length, of a high cliff of sandstone and clay. Appearances have considerably changed since the time of their journey. There is still an indentation along the bluff, showing the upper part of the portion which had slid down, but the whole is now covered with grass. The river has retired from the base of the cliff it was then undermining. A grassy plain, of some extent, occupies the spot where the bed of the river must have been; but this prairie is, in its turn, experiencing the vicissitude incident to every thing along the bank of the Missouri, and is evidently very soon to disappear entirely. A mile or two above this point are cliffs of sandstone and indurated clay, in a state of rapid disintegration. Here we observed extensive beds of aluminous earth, of a dark grey colour, alternating with red and yellowish white sandstone. Here are also numerous vegetable remains, which Mr. Say thought to consist of the limbs of trees included in the rock, carbonized and often intermixed with pyrites; smaller limbs in short fragments lay intermixed, and crossing each other in every direction.

Among other things, we observed here what appeared to be the cast of the seed vessel of the nelumbium, of uncommon magnitude. Fragments of mineral coal were observed scattered about the surface.

The mouth of the Platte, where we arrived on the 15th of September is, according to our observations, in latitude 41° 3′ 13″ north. We shall hereafter have occasion to speak more particularly of this river. Its mouth now exhibited a great extent of naked sandbars, the water, which was transparent and of a greenish colour, flowing almost unseen through a number of small channels. Masses of sand accumulate at the mouth of the Platte, rendering the navigation of the Missouri at that point extremely difficult. The Platte, during its floods, pours into the Missouri a volume of water, considerably exceeding in magnitude that of the latter river, occasioning a reflux of the waters for many miles. From the Platte upward, the annual range from high to low water in the Missouri, may be rated at about eighteen feet.

Above the Platte, the scenery of the Missouri becomes much more interesting. The bluffs on each side are more elevated and abrupt, and being absolutely naked, rising into conic points, split by innumerable ravines, they have an imposing resemblance to groups of high granitic mountains, seen at a distance. The forests within the valley are of small extent, interspersed with wide meadows covered with carices and cyperaceæ, with some species of limnetis, polypogon, and arundo, sometimes sinking into marshes occupied by sagittarias, alismas, and others of the hydrocharidæ. The woodlands here, as on the whole of the Missouri below, are filled with great numbers of pea vines*, which afford an excellent pasturage for horses and cattle. The roots of the apios tuberosa were much sought after, and eaten by the soldiers, who accompanied us in our ascent. They are little tubers about half an inch in diameter, and when boiled are very agreeable to the taste. Two and a half miles above the mouth of the Platte, and on the same side, is that of the Papilion, a stream of considerable length, but discharging little water. Here we found two boats belonging to the Indian traders at St. Louis. They had passed us some days before, and were to remain for the winter at the mouth of the Papilion, to trade with the Otoes, Missouries, and other Indians.

The banks of the Missouri, above the Platte, have long been frequented by the Indians, either as places of permanent or occasional residence. Deserted encampments are often seen. On the north-east side, near the mouth of Mosquito river, are the remains of an old Ioway village. Four miles above, and on the opposite side, was formerly a village of the Otoes. On the 17th of September we arrived at the trading establishment of the Missouri Fur Company, known as Fort Lisa, and occupied by Mr. Manuel Lisa, one of the most active persons engaged in the Missouri fur trade. We were received by a salute from this establishment, and encamped a little above, on the same side of the river.

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* Species of apios, the glycine of Lin.

CHAPTER VIII.

WINTER CANTONMENT NEAR COUNCIL BLUFF.—COUNCILS WITH THE OTOES, MISSOURIES, IOWAYS, PAWNEES, &c.

THE position selected for the establishment of winter quarters for the exploring party, was on the west bank of the Missouri, about half a mile above Fort Lisa, five miles below Council Bluff, and three miles above the mouth of Boyer's river. At this place we anchored on the 19th of September, and in a few days had made great progress in cutting timber, quarrying stone, and other preparations for the construction of quarters.

Cliffs of sparry limestone rise in the rear of the site we had selected, to an elevation of near three hundred feet.* At times of low water, strata of horizontal sandstone are disclosed in the bed of the Missouri. These pass under and support the limestone. Both these strata probably extend in connexion, some distance to the west; but as they are deeply covered with soil, we could not accurately ascertain their boundary in that direction. On the map accompanying the second volume of this work, we have traced a line running from the Canadian river of the Arkansa, to the Elk Horn, between 96° and 98° west longitude, and marking what we supposed nearly the westernmost limit of the horizontal limestones, and the argillaceous sandstones, disclosed in the beds of the larger rivers.

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* Height of the bluff, ascertained by Lieutenant Graham.

Trigonometrically, - - 271 feet.

Barometrically, - - - 277

Both these strata embrace numerous relics of marine animals, many of which we collected. [24]

Immediately after our arrival, an interpreter had been sent across the country, to intercept the traders then on their way to the Pawnees, with considerable quantities of merchandize. It was thought proper to suspend all intercourse with those Indians, until an adjustment of the recent difficulties should take place. In addition to the outrage committed on Mr. Say's party, they had made prisoners of two white hunters from the Arkansa, a father and son, who had been found hunting in the Indian territories. These men had been liberated through the interference of some of the members of the Missouri Fur Company, and had recently arrived at Fort Lisa. During their captivity, they had been treated with such severity by the Pawnees, that they had often entreated an end might be put to their lives.

The interpreter returned on the 20th, having accomplished the object of his mission. Soon afterwards, Mr. Dougherty arrived from the Oto village, whither he had been sent with a deputation to Konzas, to aid in effecting a reconciliation between those nations. This proposition, which originated with the Konzas, was favourably received by the Otoes. Mr. D. was soon afterwards despatched to the Pawnees, with instructions to demand of them the property plundered from Mr. Say's party, also to require that the persons who had committed that outrage should be given up. He was accompanied by two Frenchmen acquainted with the Pawnees and their language.

A party of Otoes arrived at Fort Lisa on the 26th of September, with pack-horses laden with peltries, and bringing with them a soldier, who, having been accidentally separated from a small detachment that were driving some beeves from Martin's Cantonments, towards Council Bluff, had wandered about in the prairie for five days, without tasting food, when he at last had the good fortune to fall in with the Otoes, who hospitably fed and conducted him to the trading-house.

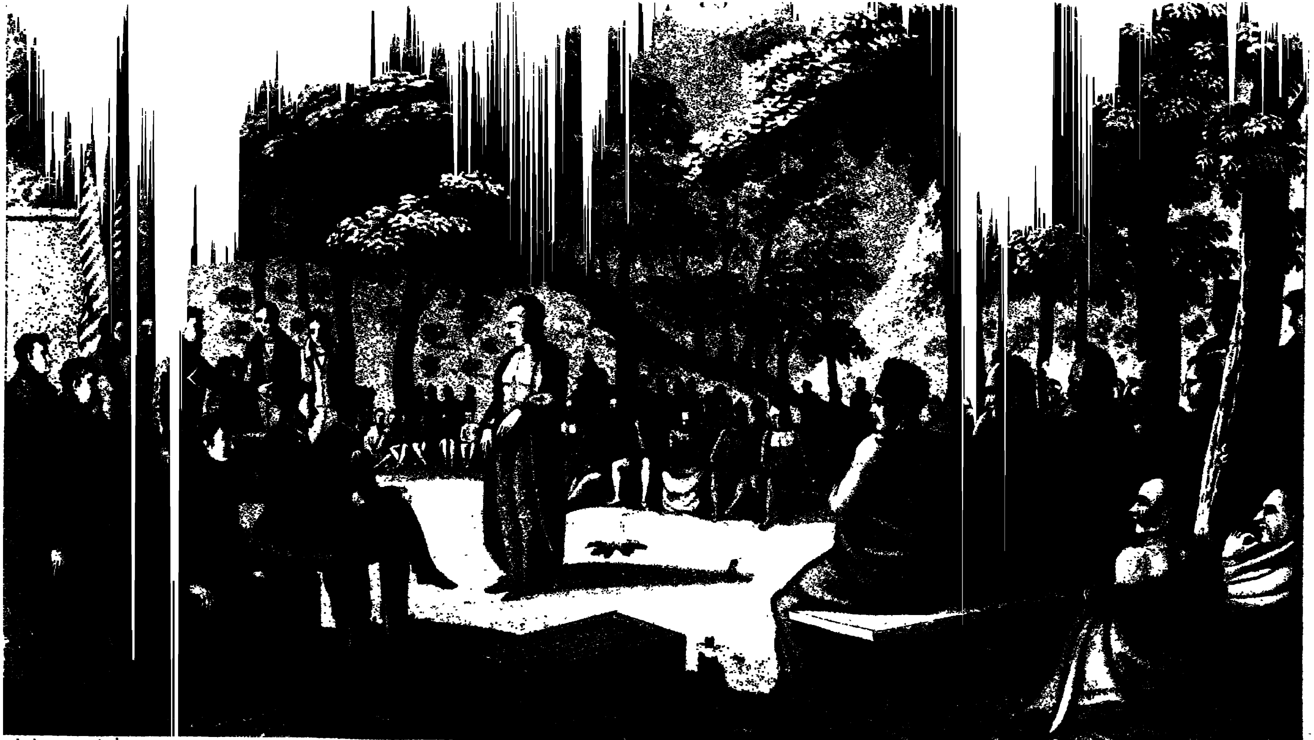
The Council Bluff, so called by Lewis and Clarke, from a council with the Otoes and Missouries held there on the 3d of August 1804, is a remarkable bank rising abruptly from the brink of the river, to an elevation of about one hundred and fifty feet. This is a most beautiful position, having two important military features, security, and a complete command of the river. Its defects are a want of wood within a convenient distance, there being little within a mile above, and much farther below, also a want of stone and of water, except that of the river. From the summits of the hills, about one mile in the rear of the bluff, is presented the view of a most extensive and beautiful landscape. The bluffs on the east side of the river exhibit a chain of peaks stretching as far as the eye can reach. The river is here and there seen meandering in serpentine folds, along its broad valley, chequered with woodlands and prairies, while at a nearer view you look down on an extensive plain interspersed with a few scattered copses or bushes, and terminated at a distance by the Council Bluff.

This position is about five miles above that selected for the wintering post of the exploring party. At the last mentioned place, a very narrow plain or beach, closely covered with trees, intervenes between the immediate bank of the river and the bluffs, which rise near two hundred feet, but are so gradually sloped as to be ascended without great difficulty, and are also covered with trees. This spot presented numerous advantages for the cantonment of a small party like ours. Here were abundant supplies of wood and stone, immediately on the spot where we wished to erect our cabins, and the situation was sheltered by the high bluffs from the north-west winds. The place was called Engineer Cantonment.

On the 26th of September, Mr. Say and Mr. Jessup arrived in the flotilla from Cow Island, in company with Col. Morgan, Dr. Gale, and Captain Magee. They had both nearly recovered their health, and entertained the liveliest sense of the eminent politeness and hospitality which had been conferred on them by the above named gentlemen, as well as the other officers of the military expedition.

About one hundred Otoes, together with a deputation of the Ioway nation, who had been summoned to a council by Major O'Fallon, presented themselves at our camp on the 3d of October. The principal chiefs advanced before their people, and upon invitation seated themselves. After a short interval of silence Shonga-tonga, the Big Horse, a large portly Indian of a commanding presence, arose and said, "My father, your children have come to dance before your tent, agreeably to our custom of honouring brave or distinguished persons."

After a suitable reply, by Major O'Fallon, the amusement of dancing was commenced by the striking up of their rude instrumental and vocal music; the former consisting of a gong made of a large keg, over one of the ends of which a skin was stretched, which was struck by a small stick; and another instrument, consisting of a stick of firm wood, notched like a saw, over the teeth of which a smaller stick was rubbed forcibly backward and forward; with these, rude as they were, very good time was preserved with the vocal performers who sat around them, and by all the natives as they sat in the inflection of their bodies, or the movements of their limbs; after the lapse of a little time three individuals leaped up and danced around for a few minutes, then, at a concerted signal from the master of the ceremonies, the music ceased, and they retired to their seats uttering a loud noise, which by patting the mouth rapidly with the hand, was broken into a succession of similar sounds, somewhat like the hurried barking of a dog. Several sets



[illegible] del.

[illegible] man, Hurst Re[illegible] 1823.

I. Clark sculp.

of dancers succeeded, each terminating as the first. In the intervals of the dances, a warrior would step forward and strike a flagstaff they had erected with a stick, whip, or other weapon, and recount his martial deeds. This ceremony is called *striking the post*, and whatever is then said may be relied upon as rigid truth, being delivered in the presence of many a jealous warrior and witness, who could easily detect and would immediately disgrace the *striker* for exaggeration or falsehood. This is called the beggars' dance, during which some presents are always expected by the performers, as tobacco, whiskey, or trinkets. But on this occasion, as none of those articles were immediately offered, the amusement was not, at first, distinguished by much activity. The master of the ceremonies continually called aloud to them to exert themselves; but still they were somewhat dull and backward. Ietan now stepped forward and lashed a post with his whip, declaring that he would thus punish those who did not dance; this threat from one whom they had vested with authority for this occasion had a manifest effect upon his auditors, who were presently highly wrought up by the sight of two or three little mounds of tobacco twist which were now laid before them, and appeared to infuse new life.

After lashing the post and making his threat, Ietan went on to narrate his martial exploits. He had stolen horses seven or eight times from the Konzas; he had first struck the bodies of three of that nation slain in battle. He had stolen horses from the Ietan nation, and had struck one of their dead. He had stolen horses from the Pawnees, and struck the body of one Pawnee Loup. He had stolen horses several times from the Omawhaws, and once from the Puncas. He had struck the bodies of two Sioux. On a war party, in company with the Pawnees, he had attacked the Spaniards and penetrated into one of their camps; the Spaniards, excepting a man and boy, fled; himself being at a distance before his party, he was shot at and missed by the man, whom he immediately shot down and struck. "This, my father," said he, "is the only martial act of my life that I am ashamed of." After several rounds of dancing, and of striking at the post by the warriors, Mi-a-ke-ta, or the Little Soldier, a war-worn veteran, took his turn to strike the post. He leaped actively about, and strained his voice to its utmost pitch whilst he portrayed some of the scenes of blood in which he had acted. He had struck dead bodies of individuals of all the red nations around, Osages, Konzas, Pawnee Loups, Pawnee Republicans, Grand Pawnees, Puncas, Omawhaws, and Sioux, Padoucas, La Plais or Bald Heads, Ietans, Sauks, Foxes and Ioways; he had struck eight of one nation, seven of another, &c. He was proceeding with his account when Ietan ran up to him, put his hand upon his mouth, and respectfully led him to his seat. This act was no trifling compliment paid to the well-known brave. It indicated that he had still so many glorious acts to speak of, that he would occupy so much time as to prevent others from speaking, and put to shame the other warriors by the contrast of his actions with theirs.

Their physical action in dancing is principally confined to leaping a small distance from the ground with both feet, the body being slightly inclined, and upon alighting, an additional slight but sudden inclination of the body is made, so as to appear like a succession of jerks; or the feet are raised alternately, the motions of the body being the same. Such are the movements, in which the whole party correspond; but in the figures, as they are termed in our assembly rooms, each individual performs a separate part, and each part is a significant pantomimic narrative. In all their variety of action they are careful to observe the musical cadences. In this dance Ietan represented one who was in the act of stealing horses. He carried a whip in his hand, as did a considerable number of the Indians, and around his neck were thrown several leathern thongs, for bridles and halters, the ends of which trailed upon the ground behind him; after many preparatory manœuvres, he stooped down, and with his knife represented the act of cutting the *hopples* of horses; he then rode his tomahawk, as children ride their broomsticks, making such use of his whip as to indicate the necessity of rapid movement lest his foes should overtake him. Wa-sa-ba-jing-ga, or Little Black Bear, after a variety of gestures, threw several arrows in succession over his head, thereby indicating his familiarity with the flight of such missiles; he at the same time covered his eyes with his hand to indicate that he was blind to danger. Others represented their manœuvres in battle, seeking their enemy, discharging at him their guns or arrows, &c. &c. Most of the dancers were the principal warriors of the nation, men who had not condescended to amuse themselves or others in this manner for years before; but they now appeared in honour of the occasion, and to conciliate in the best manner the good will of the representative of the government of the Big-knives. Amongst these veteran warriors Ietan, or Sha-mon-e-kus-se, Ha-she-a, the broken arm, commonly called Cut Nose, and Wa-sa-ba-jing-ga, or Little Black Bear, three youthful leaders, in particular attracted our attention. In consequence of having been appointed soldiers on this occasion, to preserve order, they were painted entirely black. The countenance of the former indicated much wit, and had in its expression something of the character of that of Voltaire; he frequently excited the mirth of those about him by his remarks and gestures. Ha-she-a, called Cut Nose, in consequence of having lost the tip of his nose in a quarrel with Ietan, wore a handsome robe of white wolf skin, with an appendage behind him, called a *crow*. This singular decoration is a large cushion, made of the skin of a crow, stuffed with any light material, and variously ornamented; it has two decorated sticks projecting from it upward, and a pendant one beneath; this apparatus it secured upon the buttocks by a girdle passing round the body. The other actors in the scene were decorated with paints of several colours fantastically disposed upon their persons. Several were painted with white clay, which had the appearance of being grooved in many places. This grooved appearance is given by drawing the finger nails over the part so as to remove the pigment from thence in parallel lines. These lines are either rectilinear, undulated, or zigzag; sometimes passing over the forehead transversely or vertically; sometimes in the same directions, or obliquely over the whole visage, or upon the breast, arms, &c. Many were painted with red clay, in which the same lines appeared. A number of them had the representation of a black hand with outspread fingers, on different parts of the body, strongly contrasting with the principal colour with which the body was overspread; the hand was depicted in different positions upon the face, breast, and back. The face of others was coloured, one half black, and one half white, or red and white, &c.; many coloured their hair with red clay; but the eye-lids and base of the ears were generally tinged with vermilion. At the conclusion of the ceremony, whiskey, which they always expect on similar occasions, was produced, and a small portion was given to each. The principal chiefs of the different nations, who had remained passive spectators of the scene, now directed their people to return to their camp. The word of the chiefs was obeyed, excepting by a few of the Ioways, who appeared to be determined to keep their places notwithstanding the reiterated command of the chiefs. Ietan now sprang towards them, with an expression of much ferocity in his countenance, and it is probable a tragic scene would have been displayed had not the chiefs requested him to use gentle means, and thus he succeeded, after which the chiefs withdrew.

October 4th. At ten o'clock, the hour appointed for the council, the Indians, headed by their chiefs, arrived; and after shaking us all by the hand took their seats. There were about one hundred Otoes, seventy Missouries, and fifty or sixty Ioways. They arranged themselves, agreeably to their tribes, on puncheon benches, which had been prepared for them, and which described a semicircle, on the chord of which sat the whites, with Major O'Fallon and his interpreters in the centre. Sentinels walked to and fro behind the benches; and a handsome standard waved before the assembly. The council was opened by a few rounds from the howitzers. A profound silence reigned for a few minutes, when Major O'Fallon arose, and in a very animated and energetic manner addressed his Indian auditors. Suitable replies were given by Shonga-tonga, the Crenier, and others, with all the extravagant gesticulation which is one of the prominent features of Indian oratory.

At the termination of the council, presents were made of blankets, kettles, strouding, tobacco, guns, powder, and ball, &c. The Big Horse and the Crenier only were acknowledged as chiefs, and to the latter, who did not possess a large medal, one was given in exchange for a smaller one which he possessed. No chief was acknowledged amongst the Missouries, as it is the wish of Major O'Fallon to extinguish as much as possible national prejudices between these two nations or tribes.

Cut Nose now presented to the agent his crow and bison robe ornamented with hieroglyphicks. The Little Black Bear presented his robe of white wolf and bison skin, and a pair of handsome leggings. The Black Bird presented a robe and the serrated instrument of music before mentioned, observing, significantly, that the latter was then the only weapon he possessed with which he could defend his father.

October 5th. Last evening Loutre, an old Missouri Indian died; he had spoken in the council a few hours before, and remarked then that he had not long to live. He was buried without ceremony near the trading house.

October 9th. Messengers who had been sent yesterday for the Pawnees returned, having met with them on the Elk Horn creek, twenty-five miles distant, on their way hither. They arrived about noon, seventy in number, consisting of individuals of each of the three tribes, called Grand Pawnees, Pawnee Republicans, and Pawnee Loups, or Pawnemahas, and halted at some distance from our camp. As we approached them we observed the majority of them standing in a forest of young willow trees, holding their mules by the bridles, and looking dubiously around. The chief of the principal band, Long Hair, was haranguing them in a loud voice, " Take off your saddles; why do you stand peeping and trembling in the bushes? you ought to have trembled when the whites were seen near the Konza village, &c." We saluted the principal men in the usual manner of shaking by the hand, though not with much cordiality. Major O'Fallon then said, " Pawnees, encamp here and smoke your pipes in security; you have conducted yourselves badly, but the whites will not harm the red-skins when they have them thus in their power; we fight in the plains, and scorn to injure men seated peaceably by their fires. Think well of what you will have to say to me in council to-morrow." These assurances appeared to annul their present apprehensions, and they proceeded to encamp.

Three boats came from Camp Missouri to take on board a quantity of provisions which are stored here for the troops; we exchanged salutes with them. The noise of the artillery excited the apprehensions of the

Indians; who, being sensible of having grossly offended the whites, now anticipated some exemplary punishment, and were not at ease until reassured of their safety, and the cause of the firing of such great guns so near them was explained.

In the evening, accompanied by several gentlemen of the party, we visited the camp of the Pawnees, whom we found sitting round their fires, smoking their pipes in silence. Some were employed in making bows, having found plenty of hickory, and hop horn beam wood here, which are not to be procured in the vicinity of their villages. Their mules were tied to trees, feeding on the bark of the cotton wood. The three tribes were seated around different fires. We sat down in the group of Grand Pawnees, and smoked with their chief Tar-ra-re-ca-wa-o, or Long Hair. This an hereditary chief, of a lofty and rather haughty mien; his mouth is, perhaps through habit, drawn down a little at the corners. He has the appearance and character of an intrepid man, although not distinguished as a warrior, having, during his life, killed but a single man, who was a Spaniard. He is, however, artful and politic, and has performed some laudable actions. The following anecdote may serve in part to illustrate the more amiable traits of his character. Dorion, a Mestizo, on a trading expedition, had accumulated a considerable quantity of peltry, at the Pawnee republican village, when it was situated on the Republican fork of the Konza river. As he had no horses to transport his merchandize, he requested the chief of that village to assist him in conveying it to the Grand Pawnees on the Platte, as he intended to descend that river to trade with the Otoes, on his way to St. Louis; the chief directly ordered horses to be brought, the furs were packed upon them, and they departed on the journey; but owing to some alleged misconduct on the part of Dorion, the chief, when half way, ordered the goods to be taken from the horses, and to be left on the plain.

He then, with his followers, returned to his village. The trader, after bewailing his unfortunnte condition, at length resolved to go to the Grand Pawnee village and solicit the aid of Long Hair. Having arrived at the residence of the chief, he related to him in what manner he had been used by the Republican chief, and concluded by requesting assistance to bring in his goods. Long Hair, without reply, ascended to the top of his lodge and called out to his people to bring him one hundred horses. Taking the best of these, and a sufficient number of attendants, he accompanied Dorion, and assisted him to transport all his peltries, and did not cease with his good offices, until he had aided him in building a skin canoe, and had packed all the merchandize aboard, although previously told by Dorion that he had nothing to reward him with, having, as he said, traded every thing away, though at the same moment he had a number of Indian goods concealed in his packs of buffalo robes. After all was completed, "Now," said the chief, "Dorion, I know that you are a bad man; I have no doubt but you have a quantity of such goods as we want, concealed in those packs, and could reward me if you were liberal enough; but I ask nothing: you have a forked tongue. You have abused me to the whites, by calling me a rascal, saying I robbed the traders, &c.; but go, I will not harm you; tell the red head (Governor Clarke) that I am a rascal, robber, &c., I am content."

At another fire, surrounded by his particular band, sat the Knife Chief, La-che-le-cha-ru, principal chief of the Pawneemahas. He is a large portly man, with a very prepossessing countenance; the hair on the sides of his head is gray; he has a deep scar on the right side, from a wound which was inflicted by a female prisoner, of the Padouca nation, whom he had adopted and taken into his family. This squaw, becoming infuriated at the prospect of the state of slavery to which she supposed herself now reduced, stabbed her child to the heart, mortally wounded the brother of this chief, and, before she could be despatched, had inflicted this wound, through which the bowels protruded. The individuals of this band live in great harmony amongst themselves, owing probably to their having but two chiefs, who are unrivalled. The second chief is a Mestizo. Against this band we have no accusation; they have always demeaned themselves well towards the American whites.

In a third group were collected the representatives of the Pawnee Republicans; this nation or clan stands accused of whipping, robbing, and otherwise abusing a white American and his son, whom they found trapping beaver on the Arkansa river, this season; of killing two American citizens, two years since, who were also trapping beaver on the same river; and of robbing our party of sundry articles and horses, near the Konza village, whilst under the protection of the flag of our country, of the nature of which they had been instructed, and perfectly well understood. These outrages, and many others, they had committed on lands, to which they do not pretend to have any claim, situated far from their own territories, and in the immediate vicinity of nations with whom they then were, and still are, at war.*

On the following day the Pawnees were summoned to council, and in a short time they appeared marching leisurely in a narrow pathway, in *Indian file*, led by the grand chief; near this pathway the musical band was stationed, and when Long Hair arrived opposite, they struck up, suddenly and loudly, a martial air. We wished to observe the effect which instruments, that he had never seen or heard before, would produce on this distinguished man, and therefore eyed him closely, and were not disappointed to observe that he did not deign to look upon them, or to manifest, by any motion whatever, that he was sensible of their presence. The Indians arranged themselves on the benches prepared for them, and the cessation of the music was succeeded by stillness, which was succeeded by stillness, which was suddenly interrupted by loud explosions from our howitzers, that startled many of us, but did not appear to attract the notice of the Pawnees.

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* It was a party of the Grand Pawnees that robbed and ill-treated Lieutenant Pike and his party, when traversing the country within their range.

Major O'Fallon rose and addressed them in a very austere tone and manner; stating the offences they had committed against the white people, and admonishing them to a reformation in their conduct, and to restore the articles they had stolen from us; this was chiefly directed against the Pawnee Republicans; the Loups were applauded for their uniformly good deportment.

The council terminated after much of the property taken from us near the Konza village was restored, and a promise given that the offenders should be punished by whipping. (See Appendix C at the end of the volume.)

The leisure we enjoyed after our arrival at Engineer Cantonment, afforded the opportunity of making numerous excursions to collect animals, and to explore the neighbouring country. We give here some account of two species of sorex, taken near our cabins. [25]

Early in October the cabins for winter-quarters were completed. Having made arrangements for the subsistence of the party, and being about to return to Washington, Major Long issued orders to the officers and gentlemen of the expedition, for their government during his absence. The following extract will show to what objects they were instructed to direct their attention.

"Mr. Say will have every facility afforded him that circumstances will admit to examine the country, visit the neighbouring Indians, procure animals, &c. for the attainment of which he will call on Lt. Graham, who is authorized to make any expenditures in behalf of the expedition that may be deemed reasonable and necessary, and afford any aid in his power, consistent with the performance of other duties. Mr. Seymour or Mr. Peale will accompany him, whenever their services are deemed requisite.

" Major O'Fallon has given permission to Mr. Dougherty to aid the gentlemen of the party, in acquiring information concerning the Indians, &c.; this gentleman will, therefore, be consulted in relation to visits, and all kinds of intercourse with the Indians, that may be necessary in the prosecution of the duties of the expedition.

" In regard to these duties, the gentlemen of the expedition will consult my orders of March last. The documents transmitted from the Philosophical Society of Philadelphia, by the Secretary at War; and the instructions of Mr. Jefferson to Capt. Lewis, to be found in vol. 1st of Lewis and Clarke's expedition, and regulate their observations and inquiries accordingly.

" Lt. Graham will embrace every opportunity for celestial and barometric observations, and calculate the latitude, longitude, magnetic dip and variation, with the utmost attainable precision; also the heights of the neighbouring hills, and the adjacent high table lands. He will also continue the meteorologic observations as usual, noticing the changes of weather, and all celestial and atmospheric phenomena. To aid him in these duties, he will call on Lieut. Swift, or any other gentleman of the expedition, who may not be particularly engaged at the time in other important duties.

" It is believed, that the field for observation and inquiry is here so extensive, that all the gentlemen of the expedition will find ample range for the exercise of their talents in their respective pursuits; and it is hoped, that through their unremitted exertions and perseverance, a rich harvest of useful intelligence will be acquired."

On the 11th of October, Major Long and Mr. Jessup took leave of their friends at Engineer Cantonment, and accompanied by several other persons, began to descend the Missouri in a canoe, on their way towards Washington and Philadelphia.

CHAPTER IX.

ANIMALS.—SIOUX AND OMAWHAW INDIANS.—WINTER RESIDENCE AT ENGINEER CANTONMENT.

THE subsequent account of the transactions at and near Council Bluff, one of the observations made there, we copy from the journal of Mr. Say.

Descriptions of some of the animals which occurred, are given in the Notes. [26]

The prairie wolves [27] roam over the plains in considerable numbers, and during the night, the principal season of their hunts, they venture very near to the encampment of the traveller. They are by far the most numerous of our wolves, and often unite in packs for the purpose of chasing deer, which they very frequently succeed in running down, and killing. This, however, is an achievement attended with much difficulty to them, and in which the exertion of their utmost swiftness and cunning are so often unavailing, that they are sometimes reduced to the necessity of eating wild plums, and other fruits, to them almost indigestible, in order to distend the stomach, and appease, in a degree, the cravings of hunger.

Their bark is much more distinctly like that of the domestic dog, than of any other animal; in fact the first two or three notes could not be distinguished from the bark of a small terrier, but these notes are succeeded by a lengthened scream.

The wonderful intelligence of this animal is well worthy of note, and a few anecdotes respecting it may not be amiss. Mr. Peale constructed and tried various kinds of traps to take them, one of which was of the description called "a live trap," a shallow box reversed, and supported at one end, by the well known kind of trap sticks, usually called the "figure four," which elevated the front of the trap upwards of three feet above its slab flooring; the trap was about six feet long, and nearly the same in breadth, and was plentifully baited with offal. Notwithstanding this arrangement, a wolf actually burrowed under the flooring, and pulled down the bait through the crevices of the floor; tracks of different sizes were observed about the trap. This procedure would seem to be the result of a faculty beyond mere instinct.

This trap proving useless, another was constructed in a different part of the country, formed like a large cage, but with a small entrance on the top, through which the animals might enter, but not return; this was equally unsuccessful; the wolves attempted in vain to get at the bait, as they would not enter by the route prepared for them.

A large double "steel trap" was next tried; this was profusely baited, and the whole, with the exception of the bait, was carefully concealed beneath the fallen leaves. This was also unsuccessful. Tracks of the anticipated victims were next day observed to be impressed in numbers on the earth near the spot, but still the trap, with its seductive charge, remained untouched. The bait was then removed from the trap, and suspended over it from the branch of a tree; several pieces of meat were also suspended in a similar manner, from trees in the vicinity; the following morning the bait over the trap alone remained. Supposing that their exquisite sense of smell warned them of the position of the trap, it was removed, and again covered with leaves, and the baits being disposed as before, the leaves to a considerable distance around were burned, and the trap remained perfectly concealed by ashes; still the bait over the trap was avoided. Once only this trap was sprung, and had fastened for a short time upon the foot of a species, which was shot the following day at no great distance; it proved to be a species distinct from the prairie wolf, and we have described it under the name of C. nubilus.

In no respect disheartened by these futile attempts, many times repeated, and varied in every obvious manner, another scheme was executed, which eventuated in complete success. This was the log trap, in which one log is elevated above another at one end, by means of an upright stick, which rests upon a rounded horizontal trigger stick, on the inferior log.

The latrans does not diffuse the offensive odour, so remarkable in the two species of jackalls, (C. aureus and C. anthus) though in many respects it resembles those animals. Like the Mexicanus, the hair on the vertebral line is elongated; and we should be disposed to regard it as the same animal, but it differs from the description of that species, both in colour and physiognomy. The ears are proportionally longer than those of C. cancrivorus, and, as well as the tail, shorter than the corresponding parts of C. mesomelas.

This animal, which does not seem to be known to naturalists, unless it should prove to be the Mexicanus, is most probably the original of the domestic dog, so common in the villages of the Indians of this region, some of the varieties of which still retain much of the habit and manners of this species.

On the 14th of October, four hundred Omawhaw Indians assembled at Camp Missouri. Major O'Fallon addressed them in an appropriate speech, stating the reasons for their being called to council; upon which Ong-pa-ton-ga, the Big Elk, arose, and after shaking by the hand each of the whites present, placed his robe of otter skins, and his mockasins under the feet of the agent, whom he addressed to the following effect, as his language was interpreted by Mr. Dougherty.

"He had heard that his father wished to see him, and he had wished to see and to hear the words of his father, ever since he learned that he was ascending the river. He was informed last fall of his being at the river Platte, and as he could not then go to see him, he had now come to visit him; and here I am, my father. All these young people you see around here are yours; although they are poor and trifling, yet they are your children. I have always loved the whites since I first remember to have seen them, and this affection increases with my age. All my nation love the whites, and always have loved them. Amongst all the good things of this world I place the whites first. But it appears that there are many nations that live nearer to you than I, that do not love you, though you have done more for them, than you have done for me. When they meet with you, they flatter you, in order to get presents from you, notwithstanding which, they would not hesitate to kill some of your people on their way home. Some of them shake hands with you in a friendly manner, whilst their hands are yet stained with your blood; and if you examine your own hands, my father, I think you would find some of it adhering to them yet. For my part, my father, I am proud to boast, that my hands are clean. Never has one of my nation stained his hands with the blood of a white man. I do not understand, my father, your mode of treating those well who treat you ill. It is true, I know, that you have more sense than I have, but I cannot understand it. I have heard that the Pawnees have been to see you; a nation that has killed, robbed, and insulted your people. I was also informed that you feasted them, and at their departure you put weapons in their hands. I should not be surprised to hear, that those very weapons were stained with white man's blood before they reached the Pawnee village. This is what I cannot understand. This circumstance led me to believe, that if you treated those that have injured you so well, you surely would treat your poor children the Omawhaws, who have never done harm to your people, with much kindness also. But I am afraid the transaction will have a bad effect on my young men. When they heard of American troops ascending this river, they feared and respected them. But I am fearful that this transaction will throw them off their guard, make them lose their respect for you, and cause them to do something that they would not otherwise have done, and thus create trouble and difference between us. You said, my father, that those troops do not come to harm us. I believe it is true. I consider them all my brothers and friends. So far from thinking they come to injure me, I regard them as my shield, to guard me against bad nations around me. You say, that if ever there is a difference between us, that it will be our fault; but I hope not, my father, I cannot think that the Omawhaws will offer any indignity to your people, now that they have seen all those troops, when they have not harmed individuals who have resided years in their village unprotected, although we were then less enlightened than we now are. Some think, my father, that you have brought all these warriors here to take our land from us, but I do not believe it. For although I am but a poor, simple Indian, yet I know that this land will not suit your farmers; if I even thought your hearts bad enough to take the land, I would not fear it, as I know there is not wood enough on it for the use of whites. You might settle along this river, where timber is to be found; but we can always get wood enough in our country to make our little fires. There is one thing I fear, my father; my nation is coming down here to hunt this winter, and if you send out your soldiers to hunt also, they will drive off all the game, and our women and children will starve. We have heard of the ascent of the troops up this river ever since last fall, and we have been told by other nations, that if they chance to meet with any squaws unprotected, they ravish them. But, my father, we shall soon know if this be true or not; because, having but little to eat, our squaws will be obliged to go out into the prairies to dig roots; I shall trust to you, and not hesitate to let them go." He also observed, that he could not see the necessity of stationing so many troops here, as there was no one to oppose; he thought it desirable that they should go higher up the river, to chastise those refractory Indians who will not listen to our words. "There is one thing, my father," he observed, "which I wish you to inform me of. We have heard of your tying up and whipping individuals of several nations, as you ascended this river. What is the offence which will subject us to this punishment? I wish to know, that *I may inform my people, that they may be on their guard."* He then observed that all his children were poor, and that they had come with the expectation of receiving something from their father.

This speech, contrary to the usual mode of Indian orators, was commenced in a low tone, the voice gradually rising as the speaker proceeded, until it attained its full intonation.

Several speakers subsequently went forward and delivered their sentiments, generally alluding to the circumstance of our treating those who injure us kindly, and neglecting our friends.

Ta-sone, the White Cow, spoke with that allusion, and added, "Look at me, my father, look at my hands; examine me well, I am a wild man, born in the prairie;" and subsequently, "I told you, my father, to look at me, that you might see if there is any of the blood of your people upon me. Some, whose hands have been stained with blood, endeavour to wash it off, but some of it will still remain."

It is proper to mention, as explanatory of some of the allusions in the above speeches, that the Pawnees, at the conclusion of their council, had been invited to dine at Camp Missouri, and that many of their chiefs were there presented with sabres, as I before stated. It was to this circumstance that the above-mentioned speakers had reference, as being inexplicable to them; as it seemed as if we wished to conciliate the good will of those evil-doers through fear, and yet they could hardly accuse us of fear, surrounded as we were by so formidable an array of troops.

It was evident, however, that the speakers had mentally no reference to Major O'Fallon, as they knew he had not committed or sanctioned the acts of which they complained in their truly delicate and peculiar manner. But they looked upon him as responsible for the actions of his people, knowing him to be the representative of the government, and that in case of wrong, they could not obtain redress from any other person. How much soever Major O'Fallon may have disapproved of the treatment which the Pawnees had received from the military, he was perfectly conscious of having conducted himself towards them according to their deserts, so far as power had been placed in his hands. But being thus verbally accused, pointedly and repeatedly of injustice, for acts not his own, he arose and said, "Omawhaws, you say I called the Pawnees here to feast them and make them presents, after they have killed and insulted us, but it is not true. I did not smoke the pipe of peace with them, neither will I, until our differences are settled. I told the Pawnees that, even if I stood unsupported before them, I would, nevertheless, either compel them to make reparation for their offences, or leave my bones amongst them for my nation to come and bury."

The Big Elk, and Big Eyes, were the only chiefs acknowledged by Major O'Fallon, who then made liberal presents to them for their people.

Some of these presents were distributed by the Indians after a peculiar manner, but which I learn is very common amongst the Indians of this country. A certain portion of them is placed upon the ground, and whoever can *strike the post* the most frequently, gains them. Another portion is then staked for any other competitors who may choose to advance. A valuable stake was then offered, and an aged veteran stepped forth, and looking round upon his nation with a majestic mien, in which there was not a little expression of triumph, he seemed to challenge the bravest of the brave to come forward and compete with him for the possession of it; but agreeably to his expectations no one advanced, and he bore off the prize by common consent, without going through the ceremony of *striking*.

From the 24th of October to the 10th of November, the atmosphere was generally filled with a dense smoke, like a fog or stratus, which proceeded from the conflagrated prairies. It sometimes affected our vision painfully, sometimes it so far intercepted the rays of the sun that the disk of that luminary appeared of a blood-red, and the eye could repose upon it uninjured. On the morning of the 8th instant it occurred in greater quantity than at any other time, when it was so extremely dense as to intercept a view of the opposite shore of the Missouri from Engineer Cantonment.

On the 9th of November some rain fell, attended with thunder and lightning. The rain continued on the day following, with the wind from the south-east; at evening the smoke was almost entirely dissipated, and the clouds, which were cirro-cumuli passing to the north-north-west, became visible.

A party of Sioux visited us on the 15th of November, to view the steam-boat. As Major Long had left orders to put the steam machinery in action accasionally, in order to preserve it from rust, Lieutenant Graham concluded to exhibit the boat with the engine in action. The Indians hesitated to enter the boat, fearing, as they said, that it was, or that it contained some *great medicine* of the Big-knives that might injure them. But when on board and at their ease, one of them observed doubtingly, "he hardly thought the Big-knives had any medicine to hurt them." They appeared much delighted with the boat; its size seemed to surprise them, several measured the width of the deck by straddling, instead of pacing as we do. We exhibited to them the air-gun, magnet, &c. which considerably excited their attention. Two of the howitzers were discharged, loaded with case-shot; the effect produced, of the shot falling into the water, at unequal distances and times, was new and unexpected, and they covered their mouths with the hand, to express their astonishment. Of these warriors, three are Tetons, one a Yancton, and a Sa-ho-ne; three different tribes of the great Dacota or Sioux nation. They are fine looking men, with very prominent cheek-bones. They are more attentive to their dress, and are much neater than the other Indians we have seen; though it is proper to observe that, as visitors, they are clothed in their best attire. They decorate their hair with a profusion of feathers of the war eagle, and of a species of owl which we have not seen. They also suspend in the head-dress an entire skin of the paroquet. The hair is in great profusion, and is thrown upon the back in very long rolls; but upon close inspection, the greater portion of it is perceived to be false hair artificially attached to their own, the points of junction being indicated by small masses of clay, with which the attachment is effected. Two of these Tetons are inseparable friends, were raised together from their infancy, and although not allied by blood, there is a strong personal resemblance between them, which is not a little enhanced by a studied similarity in dress and ornaments. These two individuals are firm friends to the whites. One of them was a few years since at the Sa-ho-ne village in company with a trader, and being invited to a feast, they had proceeded but a short distance, when a Sa-ho-ne rushed from his concealment and knocked the trader down with his war-club. The Teton immediately attacked the assailant, felled him in his turn to the earth, gashed his body with the spear of his war-club and left him for dead. This is a strong evidence of the determination of the savages, as they are called, to protect those whom they consider under their guardianship. The Teton retaliated the blow given to the trader, not only at the immediate risk of his life in the combat, but of having to expiate the deed to many a kindred exasperated warrior, and also at the hazard of originating a war between the two bands.

In the course of the winter we received frequent supplies of provisions from Camp Missouri; and by means of some exertion and diligence in hunting, we were able to procure plenty of fresh venison and other game. For coffee we substituted the fruit of the gymnocladus canadensis, which afforded a palatable and wholesome beverage. The flesh of the *skunk* we had sometimes dressed for dinner, and found it a remarkably rich and delicate food.

On the 5th of December, the gentlemen of the party dined by invitation with Mr. M. Lisa.

The principal Ioway chief was once at our camp; he is a very intelligent Indian, with a solemn dignity of deportment, and would not deign to enter our houses or even to approach them until invited. He is said to have a more intimate knowledge of the manners of the whites, than any other Indian of the Missouri, and to be acquainted with many of the words of our language, but will not willingly make use of them, fearing to express himself improperly, or not trusting to his pronunciation. He remained near Council Bluff in the autumn, in order to be present at the councils with the different nations, and to observe the conduct of the whites towards them respectively, a considerable time after his nation had departed down the river to their beaver trapping. After this he went with his family to the head waters of the Boyer, and during his stay there trapped sixty beaver; when with us he was about to go in search of his people. He had three wives with him, one of whom appeared to be about nine or ten years of age, and whom we mistook for his daughter, until he undeceived us. We showed him our books of engravings, with which he was highly pleased. The Indians, almost all of them, delight to look over engravings, particularly those which represent animals; they are not soon fatigued when employed in this way.

This Indian is known by several names, as Grand Batture, Hard Heart, Sandbar, and in his own language, Wang-e-waha. During our late contest with Great Britain, he turned his back upon his nation, in consequence of their raising the tomahawk upon our citizens, and crossing the Missouri, united his destiny with the Otoes, who received and treated him with distinguished respect. Last autumn his nation joined him, and submitted to his guidance; so that the Otoes, Missouries, and Ioways were then united.

Some time since in a transaction with a captain, formerly of the United States' army, he thought himself grossly insulted, and demanded on the spot personal satisfaction, agreeably to the custom of the whites, challenging his opponent to single combat, with pistols or such other weapons as he might choose.

He is esteemed the bravest and most intelligent of the Ioways, and amongst the Otoes he was associated with many equally brave with himself. But as there are national prejudices amongst the Indians as well as amongst the whites, he has not escaped from many a keen allusion to his nation. In a quarrel, which arose from some expressions of this nature, Ietan knocked him down with a war-club.

He has been in fifty battles, and has commanded in seven.

He says the white people often request the Indians to abstain from war, and yet the white people continue to fight each other, as if they wished to monopolize the occupation of war, and thereby deprive the Indian of his principal avenue to honour and dignity.

Several Omawhaws, who have been trapping in the country opposite to Blackbird-hill, remained with us last night. The principal one, A-ha-ga-nash-he, or the Upright Horn, has a rather handsome Sioux squaw, to whom he appears to be much attached, paying her great attention in conversation, giving her a portion of his whiskey, and handing her the pipe to smoke. She is, however, not exempted from the ordinary employments of the Indian women, and we had an opportunity to-day of seeing her depart from Mr. Lisa's with a heavy load, consisting of the goods which her husband had received in exchange for his beaver, on her back, whilst he carried only a keg of whiskey slung over his shoulders, and his gun and hunting apparatus. Previously to the departure of the Omawhaws from our establishment this morning, the brother of one of them, who, report said, had been killed by the Sioux, arrived; he has been with about ten lodges, (about twenty men) of his tribe trapping on the Elk Horn, and they have taken about two hundred beavers. He has taken sixty himself, of which he presented his elder brother twenty, and is on his way to Mr. Lisa, to have a trader with merchandize sent to his party to deal for the skins. It is a singular circumstance, that this is the second instance of these two brothers meeting in this vicinity, after the one had been supposed to have been killed by the Sioux.

A-ha-ga-nash-he, whom we invited to take up his lodgings for the night in our room, became alarmed at my repute as a medicine man, fearing that I would cast some spell upon him, or otherwise injure him by the operation of some potent mystic medicine: he removed his quarters to the adjoining room, where he seemed to think he was safe from my incantations.

Our hunter, whose name is No-zun-da-je; or, « He that does not dodge," is esteemed a good hunter by his nation; but he is not a distinguished warrior, although he has been in numerous battles. He says he has killed several red skins in action, but never yet had the honour to *strike* a body. He showed us the scars of many wounds, most of which he had inflicted on himself, when in mourning for the death of his relatives and friends, by thrusting arrows through the skin and a portion of the flesh of his arm. His brother, at the same time, showed many scars which he had caused by cutting out pieces from his body with a knife, on the same occasions.

Several Omawhaws visited us on the 8th, and a party of three of them, who were in possession of a keg of whiskey, invited our hunter to accompany them, for the night, to "make his heart glad" with a portion of its contents. The Omawhaws, Otoes, Missouries, and Ioways are excessively attached to this destructive liquor.

On the 9th December, Lieutenant Swift, in company with Mr. Pilcher of the Missouri Fur Company, set out on a visit to the Omawhaws. His course was first directed towards the Elk Horn river, tributary to the Platte, and afterwards along the valley of the former, to the Omawhaw encampment, which he reached at the distance of about one hundred and twenty miles. The country over which he travelled was almost entirely destitute of woodland; the surface generally cut by numerous ravines; the soil for the most part sandy, but in some instances enriched by a black loam. He returned to camp on the 23d, his companion having purchased of the Indians one hundred and thirty beaver skins, besides raccoon and deer skins.

10th. By a recent occurrence, the late treaty of peace between the Otoes and Konzas was on the eve of being infracted. The Otoes, who were encamped for hunting near the mouth of the Platte, had four horses stolen from them about two weeks since, and subsequently ten more. These robberies were immediately attributed to the Konzas, and a war-party prepared themselves to march and retaliate upon that nation. Hashea, however, prevented them from going, saying that their father (Major O'Fallon) had been instrumental in reconciling them to a peace with the Konzas, and it would be highly improper for them to strike a blow, without asking his opinion upon the subject. It seems more probable that the horses have been taken either by the Sauks or Ioways. The latter appears to be a faithless people; they obtained a considerable quantity of goods on credit, last fall, from the Missouri Fur Company, and now, we are informed, instead of returning to discharge their debts, they are on their way down the river to barter their beaver at Fort Osage. It is said they will inhabit their old village, on the river Des Moines, the ensuing season.

12th. Many Indians visited us yesterday and today, some of whom brought jerked deer meat, mockasins, &c. to exchange for their favourite drink, and for trinkets. But as we have none of the latter, and as the former is interdicted from them by our laws, we are not authorized to make any purchases. That they do contrive to get whiskey elsewhere, perhaps of the traders, we have abundant proof. Yesterday a squaw got drunk, and made much noise; but her companions, after much ado, carried her off to their encampment.

As we were cutting up a log for fuel, one of the Omawhaws seeing a knot or protuberance of the wood, suitable to form into a bowl, requested us to cut it off for him; but not choosing to gratify him in that manner, we offered the axe we were using, that he might cut it in his own way; he, however, would not accept of it, but pointed to the palm of his hand, giving us to understand that such labour would make his hand sore and hard; he then called one of his squaws, who immediately went to work, and handled the axe very dexterously. Observing several young Indians passing, I indicated to her the propriety of requesting one of them to assist her, but she laughed significantly, as if she would say — you are ironical.

The Indians are very fickle in bargaining. An Indian, some time since, exchanged his rifle for Mr. Dougherty's shot gun; yesterday he reversed the bargain, giving a pair of mockasins in return; and this morning he requested to exchange again, in which he was gratified.

A squaw offered to exchange mockasins for a couple of our military stocks. We could not conceive to what use she would apply them, but, upon inquiry, we learned that she wished to ornament the crupper of her horse with them.

The stone quarry, which supplied limestone for building chimnies at camp Missouri, was situate at the distance of an hundred yards below our cantonment. The labourers that were employed in this quarry opened upon many large fissures, in which were found a number of serpents that had entered there for the purpose of hybernating. Of these, three species appear to be new. [28]

This morning three Omawhaws were fired upon by a war-party of five Ioway Indians, and two were wounded; this occurred on the east side of the river, nearly opposite to our cantonment. When they fired, each one called out his name agreeably to the Indian custom. A party of Omawhaws then assembled, and pursued them about fifteen miles, but without success.

Two Oto warriors, and a boy, nephew of Ishta-gre-ja, Gray Eyes the elder, visited us this afternoon. They have been hunting on Blue Water creek, in the neighbourhood of the Konzas hunting camps, and not distant from the village of the latter; they have been so fortunate as to take one hundred and forty beavers, the skins of which they left at their village, under the care of the son of Gray Eyes and their squaws; their business in this quarter is to look out for the best market for their peltries. They say it was certainly not the Konzas who stole the horses from their brethren who are encamped near the confluence of the Platte. They attribute that theft to the Ioways, who, they say, are still fools, as they always have proved themselves to be.

30th. In the morning a nimbus from the north. An imperfect parhelion appeared at sunrise, consisting of three luminous spots, at about 22° distant from each other in the horizon; one of them was the real place of the sun, and the others were to the north and south of it. As the sun ascended towards the zenith, the mock suns continued to ascend equally and parallel with it, but became gradually fainter until they disappeared near the zenith.

Evening. A complete paraselene appeared about the moon, of the diameter of 45 degrees.

The mercury was below Zero the greater part of the day, in Fahrenheit's thermometer.

31st. Several Canadians in the employ of the Missouri Fur Company, came this evening to dance and sing before us, agreeably to the custom of their countrymen, in celebration of the termination of the year. They were adorned with paint after the Indian manner, clothed with bison robes, and had bells attached to different parts of their dress. So completely were they disguised, that three of their employers, who happened to be present, had much difficulty in recognizing them. This dance is called *La Gineolet*, and may have had its origin in the same cause that produced our *Belshnickles*, who make their appearance on Christmas-eve. We gave them what was expected, whiskey, flour, and meat.

January 6th, 1820. Mr. Graham and I measured the width of the river in two places, a short distance below our cantonment, and a short distance above;

the latter gave two hundred and seventy-seven and one-third yards, and the former one hundred yards.

We hear the barking of the prairie wolves every night about us; they venture close to our huts; last night they ran down and killed a doe, within a short distance of our huts; this morning the remains of the carcass were found, consisting only of bones and skin.

Mr. Fontenelle, in the employ of the Missouri Fur Company, who has been absent for some time trading with one of the bands of the Omawhaws, called to-day on his return; this band had been much necessitated for food, subsisting for some time upon the fruit of the red haws, which the squaws sought for beneath the proper trees, under the snow. He met with some of the nation of Sioux, called Gens de Feuille by the French. They have been much thinned in numbers by a disorder, which, from the description given of it, may be the quinsy. This same band is said to have suffered much from the small-pox last autumn. They were also now nearly starved for want of food; but they said if they could hold out until they arrived at Min-da-wa-cong, or Medicine lake, (on the maps, Spirit lake,) they would do very well, as they had there a considerable quantity of wild oats buried, or *caché*, as the French say.

13th. Ietan,* an Oto, of whom we have before spoken, visited us to-day for the purpose of getting two gun-locks mended. He left his people at the Republican fork of the Konza river, and intends as soon as he returns, to lead a party in pursuit of bisons, which he says are in plenty on the Loup fork of the Platte, about sixty miles distant from us.

14th. Ietan called this morning, and as some of our party were going to visit at Camp Missouri, he accompanied them in order to obtain Major O'Fallon's permission for his nation to go to war with the

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* Sha-mon-e-kus-se.

Konzas. He informed the agent that individuals of that nation had sometime since stolen horses from them. That one of the losers, Big Soldier, had gone to the Konza village to demand the horses; but seeing a number of horses belonging to that nation when he arrived near the village, he could not resist the temptation of immediately retaliating by seizing several, and appropriating them to his own use. But, Ietan said, he thought the honour of his nation still called for war, and he solicited the acquiescence of the agent in that measure. The Major replied, that his opinion ought to have been asked previously to the retaliatory measure which had already been prematurely taken, as they were not certain that the Konzas were the offenders, and that this ought to have been ascertained before any depredation on the Konzas had been committed. But the course which he would now advise them to pursue was, to send a deputation to the Konzas, for the purpose of ascertaining the fact, to return the Konzas' horses, and to demand their own. This course seemed satisfactory to the warrior; who, however, stated that if the Konzas attempted to steal horses from them in future, he would certainly lead a war party himself against them.

15th. Mr. Woods, of the Missouri Fur Company, has returned from a trading excursion. He reports that he saw several of the Pawnee *caches*, which had been broken open and robbed of their corn by the Omawhaws. This is by no means a rare occurrence with the Indians, but it does not appear that it has ever led to hostilities between nations; they say that when a person is in want of food, he has a right to take any he can find.

Corporal Norman, who went out this morning to kill rabbits, returned about noon with twenty-seven, which he had killed with single balls.

February 9th. Several Oto Indians have visited us within this day or two, and one of them, Ca-he-ga-in-ya, remained with us last night; he was finely dressed, had on a chief's coat laced with silver, and a profusion of wampum about his neck, and suspended to his ears; he departed this morning on his way to the Omawhaws, to trade for horses.

The ice on the Missouri is sixteen inches in thickness, that of the Boyer creek fifteen and three-fourths.

12th. Messrs. Dougherty, Peel, and myself, with an assistant, encamped at a pond near the Boyer to obtain fish; we cut several holes in the ice of the pond, and obtained one otter and a number of small fishes, amongst which three species appeared to be new; several specimens were of the genus gasterosteus.

15th. Mr. Zenoni, of the Fur Company, who departed the twenty-seventh ultimo on a trading expedition, returned and remained with us last night. He and two men had ascended the Elk Horn about twenty-five miles higher than Mr. Swift had been, but were not successful in finding any Indians. And although they saw a few bisons and antelopes, and elks, they were not so fortunate as to kill any game for subsistence, excepting three turkeys; so that they returned in a state of considerable exhaustion, having been for some time on an allowance of a little maize per day. He found that the upper part of the Elk Horn had not frozen during the severe weather, but still remained open. This circumstance seems to indicate the flow of a great quantity of spring water, or water of a medium temperature, in that part of the stream, requiring time to cool in its passage, before it can congeal.

19th. The sand is blown by the violence of the wind from the sand-bars of the river, so as to resemble a dense fog. We have been hitherto very well supplied with fresh meat, from game killed principally by Mr. Peale, who, on one occasion, killed two deer at a single shot and with one ball, but we are now reduced again to salt pork of a very inferior quality.

The party, with the exception of myself, continue to enjoy good health.

22d. Messrs. Dougherty and Peale returned from a hunt, having killed twelve bisons out of a herd of several hundreds they met with near Sioux river, and brought us a seasonable supply of meat. They saw several herds of elk, and yesterday they saw swans, geese, and ducks, flying up the river. A dinner and ball were given at Camp Missouri, in honour of the day, to which our party were invited.

24th. Mr. Graham and I endeavoured to ascertain the rapidity of the current of this part of the Missouri, at the present low water. We availed ourselves of a long vacancy in the ice to float a porter bottle, to which the proper specific gravity was given, by partially filling it with water, it was attached to a cord of one hundred and twenty-two feet in length; it floated this distance in six successive experiments in the following several times 1′ 07″—1′ 04″—1′ 07½″—1′ 05″—1′ 07″—1′ 07″, the mean of which is 1′ 06½″ nearly, giving a velocity of 1 mile 441 yards 1½ feet per hour.

By these experiments, however, the superficial current or stratum only was indicated, and as we had reason to suppose that this stratum was more impeded by friction against the inferior surface of the ice than it would be by the atmosphere, it became an object to ascertain the average velocity of the different depths. With this view a staff ten feet long was made to float vertically, by means of a weight attached to its inferior extremity; a line of one hundred and seventy-eight feet in length was run out by this arrangement, during the following intervals of time, in four experiments, viz. 1′ 21″—1′ 21″—1′ 19″—1′ 21″, of which the mean is 1′ 20½″, which would seem to indicate a current of the velocity of 1 mile 893 yards 1 foot per hour. Thus the average velocity of ten feet in depth of the current of the Missouri, is greater by almost 452 yards in a single hour, than that of a superficial stratum of about six inches depth, during the ice-bound state of the river. During these experiments the atmosphere was nearly calm.

25th. Cooked for dinner the entire hump of a bison, after the manner of the Indians; this favourite part of the animal was dissected from the vertebræ, after which the spinous processes were taken out, and the denuded part was covered with skin, which was firmly sewed to that of the back and sides of the hump; the hair was burned and pulled off, and the whole mass exhibiting something of a fusiform shape, was last evening placed in a hole dug in the earth for its reception, which had been previously heated by means of a strong fire in and upon it. It was now covered with cinders and earth, to the depth of about one foot, and a strong fire was made over it. In this situation it remained until it was taken up for the table to-day, when it was found to be excellent food. Mr. Lisa and family dined with us by invitation. That we have sometimes food in great sufficiency, the provision upon our table this day will sufficiently attest. It consisted of the entire bison hump, above mentioned; the rump of a bison roasted, boiled bison meat, two boiled bison tongues, the spinous processes roasted in the manner of spare-ribs, sausages made of minced tender loin and fat, &c. It is true that we have no vegetables whatever, but having been so long estranged from them, we scarcely regret their absence. Their place is supplied by excellent wheat flour, of which our cook prepares us bread fully equal, in point of excellence, to any that we have ever eaten. The above repast was prepared for eleven persons, of whom two were ladies. The collation was succeeded by coffee as a desert.

February 28th. I ascertained the temperature of spring water, which, however, was somewhat exposed to the atmosphere, but in a shaded situation, and in a ravine, to be 47°; that of the atmosphere being at the same time 56°, and that of the river 32°, of Fahrenheit's scale.

Wednesday, March 8th. The Big Elk, Big Eyes, and Wash-co-mo-ne-a visited us to-day on their way, with their attendants, to the traders with jerked bison meat. They presented us with five large pieces. The Big Elk, principal Omawhaw chief, is much pitted with the small-pox, and is of commanding presence. He speaks with great emphasis, and remarkably distinct. He observed that we must think them strange people to be thus constantly wandering about during the cold of winter, instead of remaining comfortably housed in their village; "But," said he, "our poverty and necessities compel us to do so in pursuit of game; yet we sometimes venture forth for our pleasure, as in the present instance, to visit the white people, whom we are always delighted to see." Big Eyes is a large and remarkably muscular man. His nose is that of the European, the opposite to the Roman curve; he is second chief of the Omawhaws.

The Omawhaw chiefs remained with us the greater part of the following day, and presented us with eight more pieces of jerked meat. We presented them in return with some tobacco, &c. The Big Elk made us a considerable harangue, with all the remarkable vivacity, fluency, and nerve of Indian eloquence, in which he said that he would address me by the title of father; "And you," said he, to Mr. Dougherty, "whom I know so well, I will call brother. The Indians around," said he, "who tell the white people that they love them, speak falsely, as is proved by their killing the white people; but my nation truly love you, they have never stained their hands with the blood of a white man, and this much cannot be said by any nation of this land." He added a strong expression, that such was his attachment to us, that he believed that he should, at a future day, be a white man himself.

When they took their leave, we advised them not to visit Camp Missouri, telling them what, in fact, they had already been informed of, that many of the soldiers were sick; (we did not wish them to observe the extent of the malady, with which that camp was afflicted,) but Big Elk remarked, that it had been his intention to go there, and it was not fear that could prevent him; his life was at the disposal of the great Wahconda only, and he could not die before his time; "But," said he, "agreeably to your request I certainly will not go."

Of all the objects which we exhibited to the view of the chiefs, quicksilver (mercury) seemed to excite the most surprise; they weighed the vessel, in which it was contained, in their hands, dipped their fingers into it, and were surprised at the resistance which it offered to the immersion, and what appeared most singular was, that they should be withdrawn without any appearance of moisture upon them; that they might not be deceived they repeated the experiment again and again. A couple of iron nails were then thrown upon the mercury, and as these did not sink to the bottom, they pressed them down with their fingers; but finding that the nails constantly arose again to the surface, the Big Elk returned the vessel to me, saying, with a smile of pleasure strongly impressed on his strongly marked countenance, that the fluid was the Omawhaw's Wahconda.

The last load of stone, which was taken from the quarry early in December last, was prevented from reaching Camp Missouri by the floating ice; the boat was driven ashore and abandoned. It was now observed floating down the river, with a large quantity of drift ice; and, when opposite our cantonment, was readily secured by Major Ketchum, without having received any injury whatever. Major Ketchum, with a detachment of men, has been engaged for two or three days past in cutting out of the ice, three of the boats from our harbour. These, together with one, which is at Camp Missouri, are intended to convey the sick from that camp down the river to Fort Osage. Camp Missouri has been sickly, from the commencement of winter; but its situation is at this time truly deplorable. More than three hundred soldiers are, or have been sick, and nearly one hundred have died. This fatality is occasioned by the scurvy (scorbutus). Individuals who are seized rarely recover, as they cannot be furnished with the proper aliments; they have no vegetables, fresh meat, nor antiscorbutics, so that the patients grow daily worse, and entering the hospital is considered by them as a certain passport to the grave. Yet it is some consolation to reflect that all the science, care, and attention of the healing art have been exerted for the relief of the sufferers by Doctors Gale and Moore, as far as their present insulated situation will admit. The causes which have been productive of all this disease, are not distinctly known, although there are many supposed ones to which it has been imputed. But it was generally remarked, that the hunters, who were much employed in their avocation, and almost constantly absent from Camp Missouri, escaped the malady.

On the 19th, Mr. Immel, of the Missouri Fur Company, returned from an expedition to the Sioux. During his stay in the vicinity of the pseudo volcanoes, which occur on the banks of the Missouri, a tremendous subterranean explosion occurred, which much alarmed the Indians as well as the whites; the concussion was succeeded by a large volume of dense smoke from the aperture of the volcano, by the sinking in of a portion of the hill in the rear, and by the cracking of the ice in the river. Messrs. Peale, Swift, and Dougherty departed in a periogue yesterday, on their way to the Bowyer Creek to hunt.

An igneous meteor, or jack-o'-lantern, was seen on the evening of the 20th, near our cantonment; it was described to me as of the size of a double fist, with a caudate appendage, or tail, of the length of about two feet; it emitted a light of the colour of the flame of burning sulphur; it passed along the river shore nearly over the observer's head, at but a very small elevation, nearly in a right line, with an equable motion, about as rapid as the flight of a bird, and with an audible sound like the blowing of a moderate stream of air through a thicket; it was visible about one half a minute, when it crossed the river, became paler, and disappeared.

The waters of the Missouri have been as clear during the winter as ordinary rivers; the earthy matter, which they hold in suspension during the temperate and warm weather, and which every person who views the river remarks as characteristic of its waters, subsides as soon as the wintry temperature occurs, but is again renewed in the spring. They have been gradually more and more turbid, these two or three days past. The ice in the river broke up on the 29th ult., and entirely disappeared on the 19th instant.

Great flights of geese, swans, ducks, brant, and cranes have been passing up the river, at their usual migrating altitude above the surface of the earth; but this migration of these aquatic birds has nearly ceased.

April 5th. A war-party of Omawhaws arrived at the trading house of the Missouri Fur Company. They are one of three parties, which have been for ten days past in pursuit of a war-party of thirteen Sauks who carried off a number of horses from near the Omawhaw village. They pursued the trail of the Sauks, until they lost it nearly opposite to this place; they, nevertheless, continued the pursuit in the direction which they supposed the enemy had taken, but are now returning unsuccessful; they say they are in hopes, that one of the other parties may overtake them. It seems probable, that it was this same party of Sauks who fired upon a soldier on the 30th ult.

6th. The war-party mentioned yesterday visited us this *morning*, on their way home. They danced for us, and after receiving bread, buffaloe meat, and tobacco, departed well pleased. In the afternoon, another war-party of eleven Omawhaws, who had also been in pursuit of the same Sauks, arrived. We were notified of their proximity by hearing their war-song, and going out, we observed them at a short distance arranged in a line, from the centre of which were elevated two handsome streamers, which, upon their approach, we found to be two long lances, to which feathers of different colours, fancifully arranged, were attached. The partizan advanced, and made us a speech as usual, in which he gave an account of of their adventures, and concluded by praising the kindness of the whites, their hospitality, and their greatness in arts and arms. This address being well understood to aim at food and lodging, though neither of these were mentioned, we supplied them with bison meat, bread, and maize, and invited them to remain with us during the night to rest themselves in comfort and safety. They immediately sat down, and, the food being portioned out by one of the warriors, they proceeded to eat with the appearance of such appetites as convinced us that their fast had been of long duration. In conversation during the evening the partizan said, that they had followed a considerable trail, supposing that the Sauks had taken that direction; that they observed stakes stuck in the ground at certain distances, and the trees *blazed* as far as they went upon that trail. He inquired if we knew the reason of such marks; he was then informed, that it was to indicate the course of a road which was to be made in that direction, and that if he had travelled far enough upon the trail he would have met with towns of white people, who would have treated him well. After musing some time, he observed, that they had travelled a good distance on that route, and having occasion to deviate a short distance from it, they found when they returned that a white man and three horses had passed along during their absence; (this was Lieutenant Fields, the express,) they immediately despatched two of their young men back to follow him, and to learn if he had met the fugitive Sauks; but they could not overtake him. "We continued on," said Naugh-ken-ne (or the Left Hand), "with all speed; but at length, being almost famished, we were necessitated to halt and hunt; of course we gave over the pursuit. Not wishing to return to our nation without obtaining some trophy, we resolved to go to Nishnebottona, in order to strike upon the Ioways, who, we had been informed, were at that place; but when we arrived there, we had the mortification to learn that they were gone; we must, therefore, return without these poor young men having any opportunity to distinguish themselves." "Did you not," we asked, "make peace with the Ioways last season?" "Yes, it is true we made a kind of peace with them, but you know they are bad men; we do not like them; the whites do not like them; perhaps it was a party of that nation, and not Sauks, that stole our horses, and you know it was very hard to be obliged, after all our difficulties and starvations, to return to our people without either scalps or horses. We wished to obtain some trophy that should repay us for our toils." In the evening they sang for our amusement a number of tunes, whilst two or three danced as well as they could in our small chamber. A negro belonging to the Fur Company coming in on an errand, they spoke of him as the *black white man*, and one of them jokingly said, he was a Wasabajinga, or little black bear.

The Indians departed early on the 7th, with many thanks for the attention they had received. Before they went, they presented to us a wild cat, which they had shot, but we advised them to keep it to eat on the way home, upon which they thanked us for it, as if they had never owned it.

11th. We learn that a third war-party of Omawhaws, who departed in pursuit of the Sauks before either of the others, were met by a strong party of that nation, who were on their way to the Omawhaw village; they however escaped from them with the loss of one man killed and several wounded; the loss of the Sauks is not known. The party speak highly of one of their number, a boy of twelve years, who, at a critical juncture of the engagement, ran up to several of the enemy and flashed his gun three times at them; he escaped unhurt.

CHAPTER X.

ACCOUNT OF THE OMAWHAWS.—THEIR MANNERS AND CUSTOMS, AND RELIGIOUS RITES.—HISTORICAL NOTICES OF BLACK BIRD, LATE PRINCIPAL CHIEF.

A GREAT portion of the information contained in the following pages, respecting the Missouri Indians, and particularly the Omawhaws, was obtained from Mr. John Dougherty, deputy Indian agent for the Missouri, who had an excellent opportunity of making himself acquainted with the natives, by residing for a time in the Omawhaw village, and by visiting all the different nations of this river.

This gentleman with great patience, and in the most obliging manner, answered all the questions which I proposed to him, relating to such points in their manners, habits, opinions, and history, as we had no opportunity of observing ourselves. And we have much to regret that it is not in our power to present the reader with a biographical sketch of this amiable and intrepid traveller.

The permanent Omawhaw village is situate on Omawhaw creek, within two and a half miles of the Missouri river, and about one hundred miles by water above Engineer Cantonment, and seventy by land. It consists of dirt lodges, similar to those of the Konzas already described. Omawhaw creek takes its rise from the bluffs in the rear of the village, and discharges into the river at the distance of seven miles below. About two miles from the town it dilates into a large pond, which is filled with lux-

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* The succeeding chapters, which relate to the manners and customs of the Indians, chiefly the Omawhaws, are from the notes of Mr. Say.

uriant aquatic plants, amongst which the zizania and nelumbium, are particularly worthy of note both for their beauty and importance for economical purposes. A fertile prairie, of the length of four miles by one mile and three quarters wide, is outspread in front of the village, and is bounded near the river by a narrow line of timber.

The inhabitants occupy their village not longer than five months in the year. In April they arrive from their hunting excursions, and in the month of May they attend to their horticultural interests, and plant maize, beans, pumpkins, and water-melons, besides which they cultivate no other vegetable. They also at this season dress the bison skins, which have been procured during the winter hunt, for the traders, who generally appear for the purpose of obtaining them. The young men, in the mean time, are employed in hunting within the distance of seventy or eighty miles around for beaver, otter, deer, muskrat, elk, &c.

When the trading and planting occupations of the people are terminated, and provisions begin to fail them, which occurs generally in June, the chiefs assemble a council for the purpose of deliberating upon the further arrangements necessary to be made. This assembly decrees a feast to be prepared on a certain day, to which all the distinguished men of the nation are to be invited, and one of their number is appointed to have it prepared in his own lodge. On the return of this individual to his dwelling, he petitions his squaws to have pity on him, and proceed to clean and adjust the apartment, to spread the mats and skins for seats, and to collect wood and bring water for cooking. He requests them to provide three or four large kettles, to prepare the maize, and to kill their fattest dog for a feast. The squaws generally murmur at this last proposition, being reluctant to sacrifice these animals, which are so serviceable to them in carrying burdens, like the dogs of the oberrating Tartars; but when they are informed of the honour that awaits them, of feasting all the distinguished men, they undertake their duties with pride and satisfaction.

When they have performed their part, the squaws give notice to the husband, who then calls two or three old public criers to his lodge; he invites them to be seated near him, and after the ceremony of smoking, he addresses them in a low voice, directing them to pass through the village, and invite the individuals whom he names to them, to honour him by their presence at the feast, which is now prepared, "Speak in a loud voice," says he, "and tell them to bring their bowls and spoons." The criers having thus received their instructions, sally out together, and in concert sing aloud as they pass in various directions through the village. In this song of invitation, the names of all the elect are mentioned. Having performed this duty, they return to the lodge, and are soon followed by the chiefs and warriors.

The host seats himself in the back part of the lodge facing the entrance, where he remains during the ceremony.

If the host is invested with the dignity of chief, he directs those who enter, where to seat themselves, so that the chiefs may be arranged on one side, and the warriors on the other; if he is a warrior, he seats the principal chief of the village by his side, who whispers in his ear the situation which those who enter ought to occupy; this intimation is repeated aloud by the host.

When the guests are all arranged, the pipe is lighted, and the indispensable ceremony of smoking succeeds.

The principal chief, Ongpatonga, then rises, and extending his expanded hand towards each in succession, (see Language of Signs, No. 43. App. B.) gives thanks to them individually by name, for the honour of their company, and requests their patient attention to what he is about to say. He then proceeds somewhat in the following manner. "Friends and relatives: we are assembled here for the purpose of consulting respecting the proper course to pursue in our next hunting excursion, or whether the quantity of provisions at present on hand, will justify a determination to remain here to weed our maize. If it be decided to depart immediately, the subject to be then taken into view will be the direction, extent, and object of our route; whether it would be proper to ascend Running-Water creek, (Ne-bra-ra, or Spreading water), or the Platte, (Ne-bres-kuh, or Flat water), or hunt the bison between the sources of those two streams; or whether we shall proceed farther, towards the black hills of the south-west, in pursuit of wild horses, &c."

Having thus disclosed the business of the council, he is frequently succeeded by an old chief, who thanks him for his attention to their wants, and advises the assembly to pay great attention to what he has said, as he is a man of truth, of knowledge, and of bravery; he further assures them, that they have ample cause to return thanks to the great Wahconda or Master of life, for having sent such a man amongst them.

The assembly then take the subject into consideration, and after much conversation, determine upon a route, which Ongpatonga proposed in his speech. This chief, previous to the council, is careful to ascertain the opinions and wishes of his people, and he speaks accordingly.

He sometimes, however, meets with opposition from persons who propose other hunting grounds, but their discourses are filled with compliments to his superior knowledge and good sense.

The proceedings of the council are uniformly conducted with the most perfect good order and decorum.

Each speaker carefully abstains from militating against the sensibility of any of his hearers, and uncourteous expressions towards each other on these occasions, are never heard. Generally at each pause of the speaker, the audience testify their approbation aloud, by the interjection *heh;* and as they believe that he has a just right to his own opinions, however absurd they may appear to be, and opposite to their own, the expression of them excites no reprehension, and if they cannot approve, they do not condemn, unless urged by necessity.

During the council, the criers remain seated near the fire listening to the proceedings, and at the same time attending to the culinary apparatus, as neither the squaws nor the children are admitted.

When the food is sufficiently cooked, the criers remove the kettles from the fire, and, at the proper time, one of them takes up a portion of the soup in a spoon, and after presenting it towards each of the cardinal points with one hand, whilst the other is elevated, and the palm extended, he casts it into the ashes of the fire; a small piece of the choice part of the meat is also sacrificed to the great Wahconda with the same formality, and is doubtless intended as an impetratory oblation.

They then serve out the food to the guests, placing the best portions of it before the chiefs. Each individual on the reception of his portion, returns his thanks to the host in such respectful expressions as become his relative consequence, as How-je-ne-ha—How-we-sun-guh—How-na-ga-ha, &c.; thank you father—thank you younger brother—than you uncle, &c., after which they eat in silence. The criers help themselves out of the kettles, but are careful to leave a portion in those that are borrowed, to compensate for their use.

The feast terminated, the ceremony of smoking succeeds, after which, the business and enjoyments of the council being concluded, the guests rise up in succession, and returning thanks to the host, pass out of the lodge in an orderly manner, first the warriors and afterwards the chiefs.

The criers now sing through the village in praise of the host, thanking him before the people for his hospitality, repeating also the names of the chiefs who were present, and thanking them for their kindness to the old criers, who, they say, are disqualified by age for any other occupations than those of eating, smoking, and talking; they also communicate to the people the resolutions of the council.

The prospect of a journey is highly grateful to the squaws, who lose no time in preparing for the day of departure, by actively and assiduously occupying themselves in mending mockasins and other clothing, preparing their pack-saddles and dog-sleds, and depositing in the earth, for safe keeping, all the moveables which are not to be transported with them on the journey.

The men in the mean time amuse themselves with hunting, playing with the hoop and stick, cards, dancing, &c.; whilst at night the young warriors and beaux are occupied with affairs of gallantry, or contriving assignations. The young men also adorn themselves with paint, and do honour to chiefs and distinguished braves, by dancing in their respective lodges.

The day assigned for their departure having arrived, the squaws load their horses and dogs, and take as great a weight upon their own backs as they can conveniently transport, and, after having closed the entrances to their several habitations, by placing a considerable quantity of brushwood before them, the whole nation departs from the village.

Those affluent chiefs and warriors who are the owners of many horses, are enabled to mount their families on horse-back, but the greater portion of the young men and squaws are necessarily pedestrians.

Many of the latter, besides the heavy load upon their backs, surmounted perhaps by an infant, lead a horse with one hand, on the load of which another child is often placed, and properly secured there in a sitting posture. In the other hand they often bear a heavy staff of wood, sharpened to a broad edge at one end for the purpose of digging up the *Nu-ga-re*, or ground-apple, called by the French *Pomme blanche*; a root resembling a long turnip, about the size of a hen's egg, with a rough thick skin, and hard pith. It is sometimes eaten raw, and has a sweet taste, but is rather dry; or it is dried in the sun, and pulverized; in this state it furnishes the chief ingredient of an excellent soup.

The men scatter about in every direction to reconnoitre the country for enemies and game; but, notwithstanding the constant activity of the hunters, the people are often much necessitated for food previously to their arrival within view of the bisons, an interval of fifteen or twenty days.

When at length the highly welcome news is brought of the proximity of a herd of these animals, the nation proceeds to encamp at the nearest water-course.

The travelling huts, or as they are usually denominated, skin lodges, are neatly folded up, and suspended to the pack-saddle of the horse, for the purpose of transportation. The poles intended to sustain it are at one extremity, laid upon the neck of the horse, whilst the opposite end trails upon the ground behind. When pitched, the skin lodge is of a high conic form; they are comfortable, effectually excluding the rain, and in cold weather a fire is kindled in the centre, the smoke of which passes off through the aperture in the top; on one side of this aperture is a small triangular wing of skin, which serves for a cover in rainy weather, and during the rigors of winter to regulate the ascent of the smoke. The door-way is a mere opening in the skin, and closed when necessary by the same material. They are often fancifully ornamented on the exterior, with figures, in blue and red paint, rudely executed, though sometimes depicted with no small degree of taste.

The hunters, who are in advance of the main body on the march, resort to telegraphic signals, from an elevated position, to convey to the people information respecting their discoveries. If they see bisons, they throw up their robes in a peculiar manner, as a signal for a halt; another disposition of the robe intimates the proximity of an enemy; and if one of their party has been killed, two of the survivors communicate the intelligence by running towards each other from a little distance, and on passing, one of them casts himself upon the earth.

On perceiving these latter signals, the warriors of the nation cast the burdens from their horses, and with their martial weapons ride in full speed to meet them, exhibiting more the appearance of a race, than an ordinary advance to mortal combat.

The hunters, after making the signal for bisons, to induce the people to halt and encamp, return as expeditiously as possible, and on their approach are received with some ceremony. The chiefs and magi are seated in front of their people, puffing smoke from their pipes, and thanking the Master of life, with such expressions as "How-wa-con-da," "Thanks Master of life,"—"How-nin-e-shet-ta-wa-con-da-a-mah-pan-ne-nah-pa-e-wa-rat-a-cum-ba-ra."—"Thank you, Master of life, here is smoke, I am poor, hungry, and want to eat." The hunters draw near to the chiefs and magi, and in a low tone of voice inform them of the discovery of bisons. They are questioned as to the number, and reply by holding up to the view some small sticks in a horizontal position, and compare one herd at a stated distance with this stick, and another with that, &c.

It is then the business of some old man or crier to harangue the people, informing them of the discovery, requesting the squaws to keep in good heart, telling them they have endured many hardships with fortitude, that there is now a termination to their difficulties for the present, and that on the morrow the men will go in pursuit of the bisons, and without doubt bring them plenty of meat.

On all occasions of public rejoicings, festivals, dances, or general hunts, a certain number of resolute warriors are previously appointed, to preserve order, and keep the peace. In token of their office they paint themselves entirely black; usually wear the *crow*, and arm themselves with a whip or war-club, with which they punish on the spot those who misbehave, and are at once both judges and executioners. Thus, at the bison hunts, they knock down or flog those whose manœuvres tend to frighten the game, before all are ready, or previously to their having arrived at the proper point, from which to sally forth upon them.

Four or five such officers, or soldiers, are appointed at a council of the chiefs, held in the evening, to preserve order amongst the hunters for the succeeding day.

On the following morning, all the men, excepting the superannuated, depart early in pursuit of the favourite game. They are generally mounted, armed with bows and arrows. The soldiers of the day accompany the rapidly moving cavalcade on foot, armed with war-clubs, and the whole are preceded by a footman bearing a pipe.

On coming in sight of the herd, the hunters talk kindly to their horses, applying to them the endearing names of father, brother, uncle, &c.; they petition them not to fear the bisons, but to run well, and keep close to them, but at the same time to avoid being gored.

The party having approached as near to the herd as they suppose the animals will permit, without taking alarm, they halt, to give the pipe-bearer an opportunity to perform the ceremony of smoking, which is considered necessary to their success. He lights his pipe, and remains a short time with his head inclined, and the stem of the pipe extended towards the herd. He then smokes, and puffs the smoke towards the bisons towards the heavens, and the earth, and finally to the cardinal points successively. These last they distinguish by the terms *sunrise, sunset, cold country,* and *warm country* or they designate them collectively, by the phrase of the *four winds, Ta-da-sa-ga-to-ba.*

The ceremony of smoking being performed, the word for starting is given by Ongpatonga. They immediately separate into two bands, who pass in full speed to the right and left, and perform a considerable circuit, with the object of enclosing the herd, at a considerable interval, between them.

They then close in upon the animals, and each man endeavours to kill as many of them as his opportunity permits.

It is upon this occasion that the Indians display their horsemanship, and dexterity in archery. Whilst in full run they discharge the arrow with an aim of much certainty, so that it penetrates the body of the animal behind the shoulder. If it should not bury itself so deeply as they wish, they are often known to ride up to the enraged animal and withdraw it. They observe the direction and depth to which the arrow enters, in order to ascertain whether or not the wound is mortal, of which they can judge with a considerable degree of exactness; when a death-wound is inflicted, the hunter raises a shout of exultation, to prevent others from pursuing the individual of which he considers himself certain. He then passes in pursuit of another, and so on, until his quiver is exhausted, or the game has passed beyond his further pursuit.

The force of the arrow, when discharged by a dexterous and athletic Indian, is very great, and we were even credibly informed, that under favourable circumstances, it has been known to pass entirely through the body of a bison, and actually to fly some distance, or fall to the ground on the opposite side of the animal.

Notwithstanding the apparent confusion of this engagement, and that the same animal is sometimes feathered by arrows from different archers, before he is despatched, or considered mortally wounded, yet as each man knows his own arrows from all others, and can also estimate the nature of the wound, whether it would produce a speedy death to the animal, quarrels respecting the right of property in the prey seldom occur, and it is consigned to the more fortunate individual, whose weapon penetrated the most vital part.

The chase having terminated, each Indian can trace back his devious route to the starting-place, so as to recover any small article he may have lost.

This surrounding chase the Omawhaws distinguish by the name of Ta-wan-a-sa.

A fleet horse well trained to the hunt, runs at the proper distance, with the reins thrown upon his neck, parallel with the bison, turns as he turns, and does not cease to exert his speed until the shoulder of the animal is presented, and the fatal arrow is implanted there. He then complies with the motion of his rider, who leans to one side, in order to direct his course to another bison. Such horses as these are reserved by their owners exclusively for the chase, and are but rarely subjected to the drudgery of carrying burdens.

When the herd has escaped, and those that are only wounded or disabled are secured, the hunters proceed to flay and cut up the slain.

Formerly, when the chiefs possessed a greater share of power than they now do, one of them would advance towards a carcass which struck his fancy, either from its magnitude or fatness, and the rightful owner would relinquish it to him without a word; but they now seldom put the generosity of the people thus to the test.

Some individual will usually offer his bison to the medicine, either voluntarily, or at the request of a chief, and on the succeeding day it is cooked, and all the distinguished men are invited to partake of the feast.

In the operation of butchering, a considerable knowledge of the anatomical structure of the animal is exhibited, in laying open the muscles properly, and extending them out into the widest and most entire surfaces, by a judicious dissection.

If they are much pressed by hunger, they in the first place open the flank in order to obtain the kidneys, which are then eaten without waiting for the tardy process of culinary preparation.

A hunter who has been unsuccessful, assists some one in skinning and cutting up, after which he thrusts his knife in the part he wishes for his own share, and it is given to him.

If the squaws should arrive, the knife is resigned to them, whilst the men retire a short distance from the scene, to smoke and rest themselves.

The slaughtered animals are chiefly, and almost exclusively, cows selected from the herd; the bulls being eatable only in the months of May and June.

Every eatable part of the animal is carried to the camp and preserved, excepting the feet and the head; but the brains are taken from the skull for the purpose of dressing the skin, or converting it into Indian leather. Those skins which are obtained during this season are known by the name *Summer skins*, and are used in the construction of their skin lodges, and for their personal cloathing for summer wear.

Three squaws will transport all the pieces of the carcass of a bison, excepting the skin, to the camp, if the latter is at any moderate distance; and it is their province to prepare the meat, &c. for keeping.

The vertebræ are comminuted by means of stone-axes, similar to those which are not unfrequently ploughed up out of the earth in the Atlantic states; the fragments are then boiled, and the rich fat or medulla which rises, is carefully skimmed off and put up in bladders for future use. The muscular coating of the stomach is dried; the smaller intestines are cleaned and inverted, so as to include the fat that had covered their exterior surface, and then dried; the larger intestines, after being cleaned, are stuffed with meat, and cooked for present eating.

The meat, with the exception of that of the shoulders, or hump, as it is called, is then dissected with much skill into large thin slices, and dried in the sun, or jerked over a slow fire on a low scaffold.

The bones of the thighs, to which a small quantity of flesh is left adhering, are placed before the fire until the meat is sufficiently roasted, when they are broken, and the meat and marrow afford a most delicious repast. These, together with the tongue and hump, are esteemed the best parts of the animals.

The meat, in its dried state, is closely condensed together into quadrangular packages, each of a suitable size, to attach conveniently to one side of the packsaddle of a horse. The dried intestines are interwoven together into the form of mats, and tied up into packages of the same form and size. They then proceed to *cache*, or conceal in the earth these acquisitions, after which they continue onward in pursuit of other herds of their favourite animal.

The nation return towards their village in the month of August, having visited for a short time the

Pawnee villages, for the purpose of trading their guns for horses.

They are sometimes so successful in their expedition, in the accumulation of meat, as to be obliged to make double trips, returning about mid-day for half the whole quantity which was left in the morning. When within two or three days journey of their own village, runners are despatched to it, charged with the duty of ascertaining the safety of it, and the state of the maize.

On the return of the nation, which is generally early in September, a different kind of employment awaits the ever-industrious squaws. The property buried in the earth is to be taken up and arranged in the lodges, which are cleaned out and put in order. The weeds which, during their absence, had grown up in every direction through the village, are cut down and removed.

A sufficient quantity of sweet corn is next to be prepared for present and future use. Whilst the maize is yet in the milk or soft state, and the grains have nearly attained to their full size, it is collected and boiled on the cob; but the poor who have no kettles, place the ear, sufficiently guarded by its husk, in the hot embers until properly cooked; the maize is then dried, shelled from the cob, again exposed to the sun, and afterwards packed away for keeping, in neat leathern sacks. The grain prepared in this manner has a shrivelled appearance, and a sweet taste, whence its name. It may be boiled at any season of the year with nearly as much facility as the recent grain, and has much the same taste.

They also pound it into a kind of small hominy, which when boiled into a thick mush, with a proper proportion of the smaller entrails and jerked meat, is held in much estimation.

When the maize which remains on the stalk is fully ripe, it is gathered, shelled, dried, and also packed away in leathern sacks. They sometimes prepare this hard corn for eating, by the process of leying it, or boiling it in a ley of wood-ashes for the space of an hour or two, which divests it of the hard exterior skin; after which it is well washed and rinsed. It may then be readily boiled to an eatable softness, and affords a palatable food.

The hard ripe maize is also broken into small pieces between two stones, one or two grains at a time, the larger stone being placed on a skin, that the flying fragments may not be lost. This coarse meal is boiled into a mush called Wa-na-de. It is sometimes parched previously to being pounded, and the mush prepared from this description of meal is distinguished by the term Wa-jun-ga. With each of these two dishes, a portion of the small prepared intestines of the bison, called Ta-she-ba, are boiled, to render the food more sapid.

Their pumpkins, Wat-tong, are boiled, or rather steamed, as the pot is filled with them cut in slices, with the addition of a very small quantity of water. But the greater number of these vegetables are cut into long slips, and, as well as the smaller intestines and stomach of the bison, cut in pieces, are interwoven as before mentioned into a kind of network.

A singular description of food is made use of by some tribes of the Snake Indians, consisting chiefly, and sometimes wholly of a species of ant, (formica, Lin.) which is very abundant in the region in which they roam. The squaws go in the cool of the morning to the hillocks of these active insects, knowing that then they are assembled together in the greatest numbers. Uncovering the little mounds to a certain depth, the squaws scoop them up in their hands, and put them into a bag prepared for the purpose. When a sufficient number are obtained, they repair to the water, and cleanse the mass from all the dirt and small pieces of wood collected with them. The ants are then placed upon a flat stone, and by the pressure of a rolling-pin, are crushed together into a dense mass, and rolled out like pastry. Of this substance a soup is prepared, which is relished by the Indians, but is not at all to the taste of white men. Whether or not this species of ant is analogous to the vachacos, which Humboldt speaks of, as furnishing food to the Indians of the Rio Negro and the Guainia, we have no opportunity of ascertaining.

We could not learn that any one of the nations of the Missouri Indians are accused, even by their enemies, of eating human flesh from choice, or for the gratification of a horrible luxury: starvation alone can induce them to eat of it. An Ioway Indian, however, having killed an Osage, compelled some children of his own nation to eat of the uncooked flesh of the thigh of his victim. And a Sioux of the St. Peter's dried some of the flesh of a Chippeway whom he had killed, and presented it to some white men, who ate it without discovering the imposition.

The Indians, like the Hottentots, Negroes, and monkeys, eat the lice which they detect in each others heads. The squaws search for these parasites; and we have often seen them thus occupied with activity, earnestness, and much success. One of them, who was engaged in combing the head of a white man, was asked why she did not eat the vermin; she replied, that "white men's lice are not good."

Although the bison cow produces a rich milk, yet the Indians make no use of that of the individuals they kill in hunting.

During these active employments, which the squaws cheerfully and even emulously engage in, the occupations of the men are chiefly those of amusement or recreation.

Numbers of the young warriors are very officious in offering their services to the squaws, as protectors during their field labours; and from the opportunities they enjoy of making love to their charge in the privacy of high weeds, it is extremely common for them to form permanent attachments to the wives of their neighbours, and an elopement to another nation is the consequence.

The men devote a portion of their time to card-playing. Various are the games which they practise, of which one is called *Matrimony;* but others are peculiar to themselves: the following is one, to which they seem to be particularly devoted.

The players seat themselves around a bison robe spread on the ground, and each individual deposits in the middle the articles he intends to stake, such as vermilion, beads, knives, blankets, &c., without any attention to the circumstance of equalizing its value with the deposits made by his companions.

Four small sticks are then laid upon the robe, and the cards are shuffled, cut, and two are given to each player, after which the trump is turned. The hands are then played, and whoever gains two tricks takes one of the sticks. If two persons make each a trick, they play together until one loses his trick, when the other takes a stick. The cards are again dealt, and the process is continued until all the sticks are taken. If four persons have each a stick, they continue to play, to the exclusion of the unsuccessful gamesters. When a player wins two sticks, four cards are dealt to him, that he may take his choice of them. If a player wins three sticks, six cards are dealt to him, and should he take the fourth stick he wins the stake.

They are so inveterately attached to the heinous vice of gambling, that they are known to squander in this way every thing they possess, with the solitary exception of their habitation, which, however, is regarded more as the property of the woman than of the man.

A game, to which the squaws are very much devoted, is called by the Omawhaws *Kon-se-ke-da,* or plumstone-shooting. It bears some resemblance to that of dice. Five plumstones are provided, three of which are marked on one side only with a greater or smaller number of black dots or lines, and two of them are marked on both sides. They are, however, sometimes made of bone, of a rounded and flattened form, somewhat like an orbicular button-mould; the dots in this case being impressed. A wide dish, and a certain number of small sticks, by the way of counters, are also provided. Any number of persons may play at this game, and agreeably to the number engaged in it, is the quantity of sticks or counters. The plumstones or bones are placed in the dish, and a throw is made by simply jolting the vessel against the ground to cause the dice to rebound, and they are counted as they lie when they fall. The party plays round for the first throw. Whoever gains all the sticks in the course of the game, wins the stake. The throws succeed each other with so much rapidity, that we vainly endeavoured to observe their laws of computation, which it was the sole business of an assistant to attend to.

The squaws sometimes become so highly interested in this game as to neglect their food and ordinary occupations, sitting for a whole day, and perhaps night also, solely intent upon it, until the losers have nothing more to stake.

Having now a plentiful store of provisions, they content themselves in their village until the latter part of October, when, without the formality of a council or other ceremony, they again depart from the village, and move in separate parties to various situations on both sides of the Missouri, and its tributaries, as far down as the Platte.

Their primary object at this time, is to obtain, on credit from the traders, various articles indispensably necessary to their fall, winter, and spring hunts: such as guns, particularly those of *Mackinaw*, powder, ball, and flints; beaver-traps, brass, tin, and camp-kettles; knives, hoes, squaw-axes, and tomahawks.

Having obtained these implements, they go in pursuit of deer, or apply themselves to trapping for beaver and otter. Elk was sometime since an object of pursuit, but these animals are now rather rare in the Omawhaw territories.

This hunt continues until towards the close of December, and during the rigours of the season they experience an alternation of abundance and scarcity of food. The men are very much exposed to the cold, and, in trapping, to the water. They are also frequently obliged to carry heavy burdens of game from considerable distances.

The assiduous hunter often returns to his temporary residence in the evening, after unsuccessful exertions continued the live-long day: he is hungry, cold, and fatigued; with his mockasins, perhaps, frozen on his feet. His faithful squaw may be unable to relieve his hunger, but she seats herself by his side near the little fire, and after having disposed of his hunting apparatus, she rubs his mockasins and leggings, and pulls them off, that he may be comfortable; she then gives him water to drink, and his pipe to smoke. His children assemble about him, and he takes one of them upon his knee, and proceeds to relate to it the adventures of the day, that his squaw may be informed of them. "I have been active all day, but the Master of life has prevented me from killing any game; but never despond, my children and your mother, I may be fortunate to-morrow." After some time he retires to rest, but the wife remains to dry his clothing. He often sings until midnight, and on the morrow he again sallies forth before the dawn, and may soon return with a superabundance of food. Such is the life of the Indian hunter, and such the privations and pleasures to which his being is habitually incident.

The squaws, in addition to their occupation of flaying the animals which their husbands entrap, and of preparing and preserving the skins, are often necessitated to dig the pomme de terre, *noo;* and to scratch the ground-pea, *himbaringa*, (the same word is also applied to the bean,) from beneath the surface of the soil. This vegetable is produced on the roots of the apios tuberosa, they also frequently find it hoarded up in the quantity of a peck or more in the brumal retreats of the field mouse, (mus agrarius, Var?) for its winter store. The seeds of the nelumbium luteum, analogous to the sacred bean of the Brahmins, also contribute to their sustenance; these are distinguished by the name Te-row-a, or bison-beaver, [*te*, bison; and *row-a*, beaver; in the Oto dialect,] and when roasted are much esteemed. The root of this plant is also an article of food during the privations of this portion of the year; it is either roasted or boiled; and is prepared for keeping by boiling, after which it is cut up in small pieces and dried: in taste it is somewhat similar to the sweet potato.

With the skins of the animals obtained during this hunt, the natives again repair to the traders to compensate them for the articles which they had obtained on credit. But owing to the intrigues of rival traders, the Indians are, with, however, numerous exceptions, not remarkable for any great degree of punctuality in making their returns to cancel their debts. Many obtain credit from one trader, and barter their peltries with another, to the great injury of the first.

Like genuine traders, the Omawhaws endeavour, by various subterfuges, to make the best of their market. An artful fellow will assure a trader that he has a number of skins, but that he does not wish to bring them forward, until he assembles a still greater number; but, in the meantime, he must have a keg of whiskey, otherwise he will barter his skins with another trader. Another knave owes his trader, perhaps, twenty skins; but in consequence of the unlucky occurrence of many circumstances, which he proceeds to particularize, he can at present pay but half that number, and the other ten, which he brings with him, he wishes to trade for other articles of merchandize. The trader submits to the imposition thus practised, rather than lose their custom; and is thus deservedly punished for his own deceptive proceedings with respect to his rivals, and for the habit of practising on the ignorance of the natives, in which many of them freely indulge.

Thus the Missouri traders are repaid for hardly more than half the value of the merchandize which they credit; but should they obtain peltries for one-third of the amount, they clear their cost and charges.

After having discharged their debts wholly, or in part, the Indians exchange the remainder of their skins, for strouding for breech-clouts and petticoats, blankets, wampum, guns, powder and ball, kettles, vermilion, verdigrise, mockasin-awls, fire-steels, looking-glasses, knives, chiefs' coats, calico, ornamented brass finger-rings, armbands of silver, wristbands of the same metal, ear-wheels and bobs, small cylinders for the hair, breast brooches, and other silver ornaments for the head; black and blue handkerchiefs, buttons, tin cups, pans and dishes, scarlet cloth, &c.

The man is the active agent in this barter, but he avails himself of the advice of his squaw, and often submits to her dictation.

Each nation of Indians practises every art they can devise, to prevent white traders from trafficking with their neighbours, in order to engross as much as possible of the trade themselves, and to be the carriers at second hand to the others. For this purpose they sometimes intrigue deeply, and resort to artful expedients. "You do not treat your traders as we do," said a cunning Oto to some Pawnees; "we dictate to them the rate of exchanges; and if they persist in refusing to comply, we use force to compel them; we flog them, and by these means we obtain our articles at a much lower rate than you do:"—thus endeavouring to induce those people to banish traders from their village by ill treatment.

In trade, the largest sized beaver skin is called by the French a *plus*, and constitutes the chief standard of value. Thus as many of any other description of skins as are considered of equal value with this large beaver skin, are collectively denominated a *plus*; and the number of deer, raccoon, otter, &c. that shall respectively constitute a plus, is settled between the parties, previously to the commencement of the exchanges.

Brass kettles are usually exchanged for beaver skins, pound for pound, which weight of the latter is worth about three dollars at St. Louis.

The beaver skins are embodied into neat packs by the traders, each weighing one hundred pounds, and consisting of seventy or eighty skins, according to their magnitude.

The business of this hunt having terminated with the year, the Omawhaws return to their village, in order to procure a supply of maize from their places of concealment, after which they continue their journey in pursuit of bisons.

On this occasion they divide into two parties, one of which ascends the Missouri, and the other the Elkhorn rivers. The party which discovers a herd, gives notice of the fact to the other party, by an especial messenger, and invites them to join in the pursuit of it.

This expedition continues until the month of April, when they return to their village, as before stated, loaded with provisions.

It is during this expedition that they procure all the skins, of which the bison robes of commerce are made; the animals at this season having their perfect winter dress, the hair and wool of which are long and dense.

The process of preparing the hides for the traders falls to the lot of the squaws. Whilst in the green state, they are stretched and dried as soon as possible; and, on the return of the nation to the village, they are gradually dressed during the intervals of other occupations. The hide is extended upon the ground; and with an instrument resembling an adze, used in the manner of our carpenters, the adherent portions of dried flesh are removed, and the skin rendered much thinner and lighter than before. The surface is then plastered over with the brains or liver of the animal, which have been carefully retained for the purpose, and the warm broth of meat is also poured over it. The whole is then dried, after which it is again subjected to the action of the brains and broth, then stretched in a frame, and while still wet, scraped with pumice-stone, sharp stones, or hoes, until perfectly dry. Should it not yet be sufficiently soft, it is subjected to friction, by pulling it backwards and forwards over a twisted sinew. This generally terminates the operation. On the commencement of the process, the hides are almost invariably each divided longitudinally into two parts, for the convenience of manipulation, and when finished, they are again united by sewing with sinew. This seam is almost always present in the bison robe; but one of the largest that we have seen, is used as a covering for one of our humble beds at this cantonment, and has been dressed entire, being entirely destitute of a seam.

The brain of an animal is sufficient to dress its skin, and some persons make two-thirds of it suffice for that purpose.

The skins of the elk, deer, and antelopes are dressed in the same manner; but those that are intended to form the covering of their travelling lodges, for leggings, and summer mockasins, &c. have the adze applied to the hairy side in dressing, instead of the flesh side.

Great numbers of these robes are annually purchased by the traders; and Mr. Lisa assured us, that he once transported fifteen thousand of them to St. Louis in one year.

The Indian form of government is not sufficiently powerful to restrain the young warriors from the commission of many excesses and outrages, which continually involve the nations in protracted wars; and, however well disposed the chiefs may be, and desirous to maintain the most amicable deportment towards the white people, they have not the power to enable them to compel those restless spirits, greedy of martial distinction, to an observance of that pacific demeanour which their precepts inculcate.

To accomplish this object, much depends upon the course pursued by the agents of the United States. If the character of these is dignified, energetic, and fearless, they will certainly meet that respect from the natives which is due to the importance of their missions. But, on the contrary, if their conduct is deficient in promptness, energy, and decision; if their measures are paralyzed by personal fear of the desperadoes, whom they must necessarily encounter in the execution of their duties, their counsels will fall unheeded in the assemblies which they address. [29]

The power of some of the former rulers of the Omawhaws is said to have been almost absolute. That of the celebrated Black Bird, Wash-ing-guh-sah-ba, seems to have been actually so, and was retained undiminished until his death, which occurred in the year 1800, of the smallpox, which then almost desolated his nation. Agreeably to his orders, he was interred in a sitting posture, on his favourite horse, upon the summit of a high bluff of the bank of the Missouri, " that he might continue to see the white people ascending the river to trade with his nation." A mound was raised over his remains, on which food was regularly placed for many years afterwards; but this rite has been discontinued, and the staff, that on its summit supported a white flag, has no longer existence.

This chief appears to have possessed extraordinary mental abilities, but he resorted to the most nefarious means to establish firmly the supremacy of his power. He gained the reputation of the greatest of medicine men; and his medicine, which was no other than arsenic itself, that had been furnished him for the purpose, by the villany of the traders, was secretly administered to his enemies or rivals. Those persons who offended him, or counteracted his views, were thus removed agreeably to his predictions, and all opposition silenced, apparently by the operation of his potent spells.

Many were the victims to his unprincipled ambition, and the nation stood in awe of him, as of the supreme arbiter of their fate,

With all his enormities he was favourable to the traders; and although he compelled them to yield to him one half of their goods, yet he commanded his people to purchase the remainder at double prices, that the trader might still be a gainer.

He delighted in the display of his power, and, on one occasion, during a national hunt, accompanied by a white man, they arrived on the bank of a fine flowing stream, and although all were parched with thirst, no one but the white man was permitted to taste of the water. As the chief thought proper to give no reason for this severe punishment, it seemed to be the result of caprice.

One inferior, but distinguished chief, called Little Bow, at length opposed his power. This man was a warrior of high renown, and so popular in the nation, that it was remarked of him, that he enjoyed the confidence and best wishes of the people, whilst his rival reigned in terror. Such an opponent could not be brooked, and the Black Bird endeavoured to destroy him.

On one occasion the Little Bow returned to his lodge, after the absence of a few days on an excursion. His wife placed before him his accustomed food; but the wariness of the Indian character led him to observe some peculiarity in her behaviour, which assured him that all was not right; he questioned her concerning the food she had set before him, and the appearance of her countenance, and her replies, so much increased his suspicions, that he compelled her to eat the contents of the bowl. She then confessed that the Black Bird had induced her to mingle with the food a portion of his terrible medicine, in order to destroy him. She fell a victim to the machination of the Black Bird, who was thus disappointed of his object.

With a band of nearly two hundred followers, the Little Bow finally seceded from the nation, and established a separate village on the Missouri, where they remained until the death of the tyrant.

On one occasion, the Black Bird seems to have been touched by remorse, or perhaps by penitence, in his career of enormity. One of his squaws having been guilty of some trifling offence, he drew his knife, in a paroxysm of rage, and stabbed her to the heart. After viewing her dead body a few moments, he seated himself near it, and covering his face with his robe, he remained immovable for three days, without taking any nourishment. His people vainly petitioned that he would "have pity on them," and unveil his face; he was deaf to all their remonstrances, and the opinion prevailed that he intended to die through starvation. A little child was at length brought in by its parent, who gently raised the leg of the chief, and placed the neck of the child beneath his foot. The murderer then arose, harangued his people, and betook himself to his ordinary occupations.

Towards the latter part of his life, he became very corpulent, the consequence of indolence and repletion. He was transported by carriers, on a bison robe, to the various feasts to which he was daily invited; and should the messenger find him asleep, they dared not to awaken him by a noise or by shaking, but by respectfully tickling his nose with a straw.

The successor of Black Bird was the Big Rabbit, Mush-shinga. He possessed considerable authority, but he lived only a few years to enjoy it.

Ta-so-ne, or the White Cow, the hereditary successor of Mush-shinga, being governed by an unambitious wife, remained inactive; whilst the next important man, Ong-pa-ton-ga, or the Big Elk, more distinguished for his vigorous intellect than for any martial qualities, attained to the supreme dignity, which he still retains.

The power of this amiable and intelligent chief was very considerable during the early part of his administration; and although not so absolute as his predecessors, yet it is believed that he could then inflict the punishment of death upon an individual with his own hands, with impunity. Five years ago he informed a stranger, in the presence of his people, that he could compel any one of them to lie down before him, that he might place his foot upon his neck; this assertion was assented to by his hearers.

But the influence of the grand chief of the Omawhaws has very much diminished, in consequence of the improper distribution of medals by the whites; so that, although one of the most intelligent leaders that the nation has probably ever had, yet he could hardly do more at this time than inflict a blow for the most serious offence. Still, however, he maintains a supremacy over six or seven medalled rivals, in despite of the intrigues of the traders. He does not now attempt to coerce any of his people, but substitutes advice and persuasion.

By his influence and pacific councils, he has rendered the Omawhaws a peaceful people, who limit their warfare to the punishing of war-parties that depredate on them or their possessions; and he exultingly affirms, that his hands are unstained with the blood of white men.

CHAPTER XI.

FURTHER ACCOUNT OF THE OMAWHAWS.—OF THEIR MARRIAGES.—OF INFANCY, AND THE RELATIONSHIP OF PARENTS AND CHILDREN.—THEIR OLD AGE.

In the Omawhaw nation, numbers of the females are betrothed in marriage from their infancy; and as polygamy is extremely common, the individual who weds the eldest daughter, espouses all the sisters successively, and receives them into his house when they arrive at a proper age.

During her early youth, the daughter continues under the controul of her parents, with whom she resides, and donations are occasionally made to her by the lover, which are received by the parents, and appropriated to their own use, if the addresses of the individual are favourably received; but should an alliance with him, or with his family not to be desirable, his presents are rejected, and the application is not renewed.

Between the age of nine and twelve years, the young wife is occasionally an invited visitant at the lodge of her husband, in order that she may become familiarized with his company and his bed. But her permanent residence is still at the house of her parents, where she continues until the age of thirteen or fourteen, when the parents give notice to their son-in-law, that their daughter is of sufficient age to partake of his bed. The husband then receives his bride without any formality, and leaving his other wives at home, departs with her upon a journey of a few days, during which time the marriage is consummated. On their return, the young wife again dwells in the lodge of her parents, occasionally visited by her husband, until a general hunt calls the nation from the village.

During this hunt the husband again takes possession of his bride, whose parents constantly pitch their lodge near that of the son-in-law.

The husband, previously to introducing his new wife to his lodge, endeavours to obtain the consent of his other wives; for this purpose he speaks kindly to them, states the necessity of providing them with a helpmate to alleviate their burthens, and thus succeeds in his wishes.

The new matrimonial alliance is at first productive of no discord in the family; but at length the decided partiality, displayed by the husband in favour of his recent acquisition, engenders much jealousy in the minds of his elder wives. Quarrels often succeed, which are sometimes terminated by the natural weapons of the wives, who, after the liberal use of their voluble tongues, apply for more strenuous aid to the agency of their teeth and nails, or to the somewhat more formidable array of tomahawks, clubs, and missiles.

During combats of this nature, the husband remains perfectly neutral, sitting with his robe drawn over his head. Should the wives succeed in expelling the recent intruder, who takes refuge in the house of her parents, the husband endeavours to sooth their anger, and to point out to them the impropriety of their conduct.

A lecture of this description, to women elated with victory, is not always received in the same conciliatory disposition with that which dictated the advice; but sometimes results in another quarrel, which is terminated by the administration of a few blows on the persons of his refractory squaws. These will then depart from his lodge, declaring their determination to live with him no longer; a resolution which, however, fails with their anger, and they seek a reconciliation. Their friends apply to the husband in their favour, and are informed that he was angry when he flogged them, and that he is now sorry for it. Thus matters are with but little difficulty adjusted; the wives return home, and are harangued by the husband, after which they proceed harmoniously together in their domestic employments, until some new feud arises to disturb the repose of the family.

On the general hunting expeditions, in which the nation separates into distinct bands, the husband takes with him his favourite wife, whilst the others accompany the bands in which are their parents. Sometimes, during a temporary encampment, the husband leaves his favourite for a few days, on pretence of business, in order to visit one of his wives in another band. On his return, he perceives the brow of his favourite to lower with evident displeasure; if his dog approaches her, she knocks him over with a club, and her child is repulsed with violence from her side; she kicks the fire about, pulls about the bed, and exhibits other signs of anger. The husband affects not to notice her inquietude, but suffers her to proceed in her own way, until the violence of her anger appears to be in some measure dissipated; he will then, perhaps, venture to request her to repair his mockasins for the morrow's hunt. "Take them to your dear wife in the other band," will most probably be the reply to his solicitation.

Such is sometimes the violence of the displeasure of his squaw, that he is obliged, through prudential motives, to take refuge in a neighbouring lodge, where he solaces himself with the pipe, until he supposes there is no longer danger of being provoked beyond endurance, so as to be tempted to chastise her; a discipline which she seems rather to solicit than avoid, that she may have a sufficient excuse for wreaking her vengeance on her rival, and for giving free vent to her sentiments and opinions upon her husband, in language of the most superlatively indecent and opprobrious nature.

When he retires to repose, he invites her to his bed; but receives a positive refusal: she rolls herself in her covering alone; but generally, during the night, she becomes pacific, and a negociation ensues, which restores harmony between them.

The far greater portion of their matrimonial quarrels arise from jealousy, though many affect to treat this passion with ridicule, or with indifference.

"Were you ever jealous?" said Sans Oreille, an Oto chief, to Mr. Dougherty; "I was once fool enough to be jealous, but the passion did not long torment me; I recollected that women are often alone, their husband being necessarily often absent a hunting, and even when the husband is at home, the squaw is under the necessity of going to a distance for the purpose of bringing water, or collecting wood, when frequent opportunities occur of being unobserved in the company of other men; and I am not so silly as to believe that a woman would reject a timely offer. Even this squaw of mine, who sits by my side, would, I have no doubt, kindly accede to the opportune solicitations of a young, handsome, and brave suitor." His squaw laughed heartily, but did not affect to repel the imputation.

Many husbands will take no cognizance whatever of the breach of conjugal fidelity on the part of the wife; and the offer of one of their wives for company during the night, though it might call upon our politeness for a return of thanks, was no cause of surprise to us during our stay at their villages.*

A husband of a different temperament of mind, on detecting his wife in an adulterous act, will rarely endeavour to maim her paramour, or otherwise seriously injure him by killing his horses or dogs; but his attention will be chiefly or exclusively directed to his wife, whom he punishes by cutting off her hair, rarely her ears or nose; sometimes he resorts to a different punishment, and scarifies her face and head with his knife, after which she is repudiated, and becomes a common prostitute.

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* This national trait of extreme hospitality, with respect to the disposal of the wife, is common to many nations in the various parts of the world; as amongst the African negroes, and the Laplanders; and, agreeably to the records of history, amongst the Romans, Spartans, and others.

An inexorable man, thus circumstanced, has been known to abandon his frail partner, after subjecting her to a punishment very similar to that inflicted on the incontinent Roman matron, under the authority of the Emperors.

Mr. Dougherty, being in Ong-pa-ton-ga's lodge, heard the loud voice of supplication from an unhappy father, whose daughter had been recently taken in adultery by her husband. "O, great Ong-pa-ton-ga!" said he, "whose nose is like that of a mule, and who art greater than the Wahconda himself, condescend to intercede for my daughter with her cruel husband; do not permit her face to be disfigured, her nose to be cut off, or the disgrace of the punishment of the prairie to be inflicted upon her."

A *brave*, who detected his wife in the commission of adultery, offered her no indignity, but immediately transferred her to the object of her preference, and accompanied the gift with a horse, and sundry articles of merchandize.

Even a very remote degree of consanguinity is an insuperable barrier to the marriage union. This state on the part of the man, seems to be the result of love for the woman; on that of the squaw, of convenience, or acquiescence in the will of her parents. On some occasions, however, an Indian marries through ambitious motives; he is, for instance, aspiring to the acquisition of a particular dignity; he will then endeavour to quiet the opposition of some powerful individual, by intermarrying in his family.

Their connubial attachments are often very strong.

An Omawhaw and his squaw, on a solitary hunting expedition, were discovered at a distance from their temporary lodge, by a Sioux war-party. They endeavoured to escape from the enemy, but the squaw was soon overtaken, struck to the ground, and subjected to the terrible operation of scalping. The husband, although at this time beyond the reach of the balls and arrows of the Sioux, seeing his squaw in their hands, immediately turned upon them, and drawing his knife, the only weapon he had, furiously rushed amongst them, in order to revenge the death of his squaw, even with the inevitable sacrifice of his own life; but he was almost immediately despatched, without having accomplished his heroic purpose.

In the young squaw, the catamenia, and consequent capability for child-bearing, we were informed, takes place about the twelfth or thirteenth year, and the capacity to bear children seems to cease about the fortieth year; but as superstitious notions prevent these Indians from taking any note of their ages, these periods are stated with some hesitation.

When the married squaw perceives that the catamenia does not recur at the expected period, she attaches a small leathern string to her girdle, and ties a knot in it, to note the incipient state of pregnancy, and another knot is added at termination of each successive moon, as a register of its progress.

When the squaw perceives the approach of this depurating process, she retires from her family, and erects a little shelter of bark or grass, supported by sticks, properly arranged, where she makes a fire, and cooks her victuals alone. She is thus compelled by custom to absent herself until the expiration of four days, when she returns to her lodge. During this time she must not approach or touch a horse, as the

Indians believe that such contamination would impoverish that animal. They sometimes retire, and build their little shelter under a false pretext, when the real object is to favour the approach of some esteemed lover, to whom the vigilance of the husband has denied any other means of obtaining a stolen interview.

The squaw has no need of propitiating the goddess Manageneta, but during pregnancy continues her usual avocations, and even in its most advanced stage, she neither bears a lighter burden on her back, nor walks a shorter distance in a day, than she otherwise would; neither does she expose herself the less on that account to the inclemencies of the weather.

If, on a march, a pregnant woman feels the pains of parturition, she retires to the bushes, throws the burden from her back, and, without any aid, brings her infant into the world. After washing in water, if at hand, or in melted snow, both herself and the infant, she immediately replaces the burden upon her back, weighing, perhaps, between sixty and an hundred pounds, secures her child upon the top of it, protected from the cold by an envelop of bison robe, and then hurries on to overtake her companions.

It is only at the delivery of the first child that any difficulty is ever anticipated; and, on this occasion, as there are no professed midwives, the young wife calls in some friendly matron to assist in case of need. The aid which these temporary midwives afford, seems to be limited to the practice of tying a belt firmly about the waist of the patient, and shaking her, generally in a vertical direction, with considerable violence. In order to facilitate the birth, a vegetable decoction is sometimes administered; and the rattle of the rattle-snake is also given with, it is said, considerable effect. The singular appendages of this animal are bruised by pounding, or comminuted by friction between the hands, mixed with warm water; and about the quantity of two segments constitutes a dose.

The art of *turning* does not appear to be known, neither is blood-letting practised in their obstetrics. We heard of no case of a retention of the placenta after parturition, nor of the affection of longing, or of nausea of the stomach during pregnancy.

On the delivery of her first child, the young mother, who appears to be but little enfeebled by the process, arises almost immediately, and attends to the ordinary house-work; but she does not, in general, undergo any laborious occupation, such as cutting and carrying wood, until the lapse of two or three days. The second child is brought forth without difficulty, and the parent, after bathing, ties it to a board, after their usual manner, then proceeds with her daily work, as if nothing extraordinary had occurred.

Mammary abscess is very rare; a squaw of the Sioux nation died with this complaint.

Sterility, although it does occur, is not frequent, and seems to be mostly attributable to the husband, as is evinced by subsequent marriages of the squaws.

The usual number of children may be stated at from four to six in a family, but in some families are ten or twelve. Of these the mother has often two at the breast simultaneously, of which one may be three years of age. At this age, however, and sometimes rather earlier, the child is weaned by the aid of ridicule, in which the parents are assisted by visitors.

The catalogue of the diseases, of both children and adults, probably bears a similar proportion to that of the white people, and is far less extensive and appalling. The summer complaint, so destructive to children in our region, appears to be uncommon with the Omawhaw infants; but, during their first year, they suffer more from constipation of the bowels than from any other complaint, but which is occasionally remedied by passing a small piece of soap (which is obtained from the traders,) cut into the proper shape, into the rectum.

Dentition seems to be productive of no great distress; the gums are never cut, but the teeth are permitted to force their way through. The shedding of the teeth is also accomplished without much difficulty; the milk-teeth, being forced out by the permanent ones, either fall from the mouth, or are gently extracted by the fingers of the parent.

Monstrous births sometimes occur, though rarely; and it is not known that infants are ever destroyed by their parents in consequence of deformity, unless the degree of malformation is excessive. The Indians mention two monsters which were born in their village; one of these they represent as resembling a white bear, and the other a cray-fish; they were both destroyed. The husband of the squaw, who gave birth to the former, said that she must have had connection with a white bear; but she asserted that the production of the monster was occasioned by a fright, which she received at seeing her husband suddenly, whilst he was personating that animal both in dress and gesture.

The magi affect to converse with the fœtus in utero, when the mother perceives it to be uneasy; they also sometimes venture to predict its sex.

Abortion is effected, agreeably to the assertions of the squaws, by blows with the clenched hand, applied upon the abdomen, or by repeated and violent pressure upon that part, or by rolling on the stump of a tree, or other hard body. The pregnant squaw is induced thus to procure abortion, in consequence of the jealousy of her husband, or in order to conceal her illicit amours, to which all the married squaws, with but few exceptions, are addicted.

The infant, when recently born, is of a reddish-brown colour; but in a short time it becomes whitish, though never so pure a white as that of the children of white people. The change to the national complexion is then gradual, and independent of exposure; inasmuch as those parts of their bodies, which are perpetually concealed from the light, change simultaneously with the face.

The abdomen of the children protrudes very considerably; and the sole article of dress, which the younger boys wear during the warm season, is a small belt of cloth around the middle of the abdomen, leaving every other part of the body perfectly naked. In wintry weather they have the addition of leggings, mockasins, and a small robe.

The female children are furnished with a short piece of cloth, in imitation of a petticoat, but destitute of a seam, belted round the loins, and depending as low as the knees. Their hair, when dressed, is parted longitudinally on the top of the head, and collected on each side behind the ear, into a vertical cylindric form, of the length of five or six inches, decorated with silver and brass rings and ribands; the line of separation of the hair is coloured with vermilion.

This disposition of the hair into two rolls is generally observed in the girls, and is often continued one or two years after their residence with a husband.

The girl is kept in a state of considerable subjection; she habitually conforms to all the commands of the mother, and is obliged to assist her in her ordinary occupations; if she is refractory, she receives a blow upon the head or back from the hand of the mother, but hardly ever from the father. At the age of four or five years, she is taught the use of the *hoppas*, and is gradually familiarised to carry burdens. They are trained up to industry, and are taught to cut wood, to cultivate maize, to perform the scalp dance, and are early informed of the sexual relations of men and women, and warned against the arts which will be aimed at the subjugation of their virtue.

The experienced parent, however, in addition to these salutary counsels, keeps a vigilant eye to the deportment of her unmarried daughter, and so sedulously guards her steps, that the arts of seduction, notwithstanding the free use of the licentiousness of language, appear to be more rarely triumphant over the Omawhaw maid, than over the civilized fair.

Hence a prostitute, who has never been married, is of exceedingly rare occurrence. Yet, notwithstanding the vigilance of the parent, the daughter sometimes elopes with a favoured lover, but not until she has ascertained that his intentions are perfectly honourable.

The girl displays the most affectionate regard for her parents, and grand parents.

Whilst the deportment of the sister is thus trenched and guarded, the brother roams at large, almost uncontrolled. Should his conduct be at any time flagrantly outrageous, he will, perhaps, in the anger of his parents, receive a harsh reproof; but an ill-judged affection soon prompts them to assuage his grief, and dry his tears, by presents and soothing expressions. At a very early age he is furnished with a bow and arrows, with the use of which he delights to employ himself, that he may be qualified for a hunter and warrior.

From the age of about five years to that of ten or twelve, custom obliges the boy to ascend to a hill-top, or other elevated position, fasting, that he may cry aloud to the Wahconda. At the proper season, his mother reminds him that "the ice is breaking up in the river, the ducks and geese are migrating, and it is time for you to prepare to go in clay." He then rubs his person over with a whitish clay, and is sent off to the hill-top at sunrise, previously instructed by his mother what to say, and how to demean himself in the presence of the Master of life. From this elevation he cries out to the great Wahconda, humming a melancholy tune, and calling on him to have pity on him, and make him a great hunter, horse-stealer, and warrior. This is repeated once or twice a week, during the months of March and April.

It is only when his pride is concerned, that the boy is obedient to the injunctions of his parents; on other occasions he disregards them, or replies only with ridicule. A boy in anger discharged an arrow at his mother, which penetrated her thigh; when, instead of chastising him for the act, she applauded his spirit, declaring him to be a gallant fellow, the early promise of a great warrior. But though he does not scruple thus to insult his parents, he would unhesitatingly revenge an indignity offered them by another.

He soon becomes ambitious of martial distinction, in consequence of frequently hearing the old warriors narrate their feats of arms, and eagerly anticipates the age which will justify his enrolling himself in the ranks of a war-party.

At the age of twelve or thirteen, having received every instruction respecting their mode of warfare, his wishes are gratified, and he is accepted as a volunteer in the path of honour.

As an instance of high chivalric ideas sometimes instilled into the mind of the Indian, which in some cases almost supersede the feelings of nature, and which are eminently calculated to excite a degree of enthusiasm in the youthful warrior, the following anecdote may be narrated.

The Osage nation a few years since marched to attack the Konza village. They encamped unobserved at a moderate distance from the village, and despatched two of their warriors with pipes to the Konzas to invite all their chiefs to a pretended peace conference, and to inform them that presents of horses and merchandize would be made to them, to compensate for two individuals of their nation whom the Osages had killed.

The Konzas, suspecting the treachery intended;

at first proposed to put the messengers to death, but on further consideration, supposing them sincere, the chiefs determined to accompany them. On the following morning, however, when they were about to set out for the Osage camp, a chief arose and harangued them, stating that he had had a dream in the night, from the interpretation of which, he was confident that the Wahconda was averse to their proposed visit.

This information deterred all from going, with the exception of two, who mounted their horses and followed the messenger, saying, that whatever might be the event, the Osages should not be led to believe that every individual of the nation was afraid to rely upon their faith.

They were, however, soon undeceived. The enemy, who had placed themselves in ambuscade on each side of the path at a suitable position, fired on the Konzas, one of whom was killed, and the other escaped to his people.

The Osages, who had hoped by this ruse de guerre to slaughter all the chiefs without any loss to themselves, finding their scheme abortive, rushed on to attack the village.

They were met by about one half their number of Konzas, who, after an obstinate encounter, repulsed them with considerable loss.

After the action, some one informed Son-ja-nin-ga that his son was among the slain. " Did he die with his face to the enemy?" said the father. " He did so," replied the other. " Then he perished nobly," rejoined Son-ja-nin-ga, exultingly, and " I will not lament his fall." This resolution, however, was so much at variance with his sensibility, that it could not long be maintained. He mounted on the top of his lodge, and harangued his people on the subject of the martial deeds of his son, who had already become a distinguished warrior; but when he spoke of his final scene, he was so absolutely overpowered by grief, that he precipitated himself from his elevated situation to the earth; receiving, however, but little injury, he immediately assumed the state of mourning with its utmost rigours.

At the age of fourteen or fifteen, it is not uncommon for the young Omawhaw to elope with a married woman, and fly for protection to the Puncaws.

The home of the young man, until he marries, is his father's house; but after he thus changes his condition, he repairs to the house of his father-in-law, until the birth of the first child, when he returns with his little family to his father's dwelling, where he continues to reside. On national hunts he provides a separate skin lodge for his family.

When more advanced in age, and of some little consequence or influence amongst the people, he unites with two or three families in the building of a permanent dirt lodge in the village, similar to those already described of the Konzas.

The labour of erecting this edifice devolves almost exclusively upon the squaws. The interior is readily furnished; the indispensable requisites being only a kettle, a wooden bowl, and a couple of horn spoons, a few skins for a bed and covering, a pillow made of leather stuffed with hair, and a bison's stomach, instead of a bucket, for carrying water.

On the death of the husband, the squaws exhibit the sincerity of their grief by giving away to their neighbours every thing they possess, excepting only a bare sufficiency of clothing to cover their persons with decency. They go out from the village, and build for themselves a small shelter of grass or bark; they mortify themselves by cutting off their hair, scarifying their skin, and, in their insulated hut, they lament incessantly. If the deceased has left a brother, he takes the widow to his lodge after a proper interval, and considers her as his wife, without any preparatory formality. If the deceased has not left a brother, the relations of his squaw take her to their lodges. This lamentation and mortification, which the squaws impose upon themselves, continue for a period of six or eight months, or even a year.

Many circumstances tend to show that the squaw is susceptible of the most tender and permanent attachment to an individual of the opposite sex, and that on the cessation of all hope of a union with the beloved object, the consequences have sometimes been fatal. Several instances came to our knowledge, of a young female committing the act of suicide after marriage with a person, in obedience to the will of her parents, whilst her affections were devoted to another.

The maternal fondness appears also to be not less exquisite than we perceive it to be with civilized mothers. The following anecdote may be cited in support of this observation.

In the year 1814, a trader married a beautiful squaw of one of the most distinguished families in the Omawhaw nation. This match, on the part of the husband, was induced by the following circumstances. Being an active, intelligent, and enterprising man, he had introduced the American trade to the Missouri Indians, and had gained great influence amongst them by his bravery and ingenuous deportment. But he at length perceived that his influence was gradually declining in consequence of the presence and wiles of many rival traders, to whom his enterprise had opened the way, and that his customers were gradually forsaking him.

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* This custom is the same with that of the ancient Jews under the law of Moses, for which we have the authority of St. Luke. "Moses wrote unto us, if any man's brother die, having a wife, and he die without children, that his brother should take his wife, and raise up seed unto his brother." And Elphinstone, in his account of Caubul, informs us, that among the Afghauns, as among the Jews, it is thought incumbent on the brother of the deceased to marry his widow.

Thus circumstanced, in order to regain the ground he had lost, he determined to seek a matrimonial alliance with one of the most powerful families of the Omawhaws. In pursuance of this resolution, he selected a squaw whose family and friends were such as he desired. He addressed himself to her parents agreeably to the Indian custom, and informed them that he loved their daughter, that he was sorry to see her in the state of poverty common to her nation, and although he possessed a wife among the white people, yet he wished to have one also of the Omawhaw nation. If they would transfer their daughter to him in marriage, he would obligate himself to treat her kindly; and as he had commenced a permanent trading establishment in their country, he would dwell during a portion of the year with her, and the remainder with the white people, as the nature of his occupation required. His establishment should be her home, and that of her people during his life, as he never intended to abandon the trade. In return, he expressed his expectation, that, for this act, the nation would give him the refusal of their peltries, in order that he might be enabled to comply with his engagement to them. He further promised, that if the match proved fruitful, the children should be made known to the white people, and would probably be qualified to continue the trade after his death.

The parents replied with thanks for his liberal offers, and for his disposition to have pity on them; they would not object to the connection, and hoped that their daughter would accept of him as her husband.

The parents then retired, and opened the subject to the daughter. They assured her that her proposed husband was a great man, greater than any of the Omawhaws; that he would do much for her and for them, and concluded by requesting her to acquiesce in the wishes of the white man. She replied, that all they said was, without doubt, true, and that agreeably to his request, she was willing to become his wife.

The agreement being thus concluded, the trader made presents, agreeably to the custom of the nation, and conducted his interesting prize to his house.

The succeeding spring the trader departed for the settlements, leaving her of course at his trading house.

The ensuing autumn she had the pleasure to see him return, having now conceived for him the most tender attachment. Upon his visit the following season, she presented him with a fine daughter, born during his absence, and whom she had nursed with the fondest attention. With the infant in her arms, she had daily seated herself on the bank of the river, and followed the downward course of the stream, with her eye, to gain the earliest notice of his approach. Thus time passed on. The second year the father greeted a son, and obtained his squaw's reluctant consent to take their daughter with him on his return voyage to the country of the white people. But no sooner had he commenced his voyage, and although she had another charge upon which to lavish her caresses, than her maternal fondness overpowered her, and she ran crying and screaming along the river side in pursuit of the boat, tearing out her long flowing hair, and appearing to be almost bereft of reason. On her return home she gave away every thing she possessed, cut off her hair, went into deep mourning, and remained inconsolable. She would often say that she well knew that her daughter would be better treated than she could be at home, but she could not avoid regarding her own situation to be the same as if the Wahconda had taken away her offspring for ever.

One day, in company with six other squaws, she was engaged in her agricultural labours, her infant boy being secured to his cradle-like board, which she had carefully reclined against a tree at a short distance. They were discovered by a war-party of Sioux, who rushed towards them, with the expectation of gratifying their vengeance by securing all their scalps. An exclamation from her companions directed her attention to the common enemy, and in her fright she fled precipitately, but suddenly recollecting her child, she swiftly returned full in the face of the Sioux, snatched her child from the tree, and turned to save its life, more precious than her own. She was closely pursued by one of the enemy, when she arrived at a fence which separated her from the field of the trading house. A moment's hesitation here would have been fatal; and, exerting all her strength, she threw the child, with its board, as far as she could on the opposite side.

Four of the squaws were tomahawked, and the others escaped, of which number the mother was one, having succeeded in bearing off her child uninjured.

The trader, on his arrival at the settlements, learned that his white or civilized wife had died during his absence, and after a short interval devoted to the usual formalities of mourning, he united his destinies with another, and highly amiable lady. The second season his wife accompanied him on his annual voyage up the Missouri, to his trading house, the abode of his squaw.

Previously to his arrival, however, he dispatched a messenger to his dependents, at the trading-house, directing them to prevent his squaw from appearing in the presence of his wife. She was accordingly sent off to the village of her nation, a distance of sixty or seventy miles. But she could not long remain there, and soon returned with her little boy on her back, and accompanied by some of her friends, she encamped near her husband's residence. She sent her son to the trader, who treated him affectionately. On the succeeding day the trader sent for his squaw, and after making her some presents, he directed her to accompany her friends who were then on their way to their hunting grounds.

She departed without a murmur, as it is not unusual with the Omawhaws to send off one of their wives, on some occasions, while they remain with the favourite one.

About two months afterwards the trader recalled her. Overjoyed with what she supposed to be her good fortune, she lost no time in presenting herself before the husband whom she tenderly loved. But great was her disappointment, when her husband demanded the surrender of the child, and renounced for the future any association with herself, directing her to return to her people, and to provide for her future wellbeing in any way she might choose.

Overpowered by her feelings, on this demand and repudiation, she ran from the house, and finding a periogue on the river shore, she paddled over to the opposite side and made her escape into the forest with her child. The night was cold, and attended with a fall of snow and hail. Reflecting upon her disconsolate condition, she resolved to return again in the morning, and with the feelings of a wife and a mother to plead her cause before the arbiter of her fate, and endeavour to mitigate the cruel sentence.

Agreeably to this determination, she once more approached him, upon whom she believed she had claims paramount to those of any other individual. "Here is our child," said she: "I do not question your fondness for him, but he is still more dear to me. You say that you will keep him for yourself, and drive me far from you. But no, I will remain with him; I can find some hole or corner into which I may creep, in order to be near him and sometimes to see him. If you will not give me food, I will, nevertheless, remain until I starve before your eyes."

The trader then offered her a considerable present, desiring her at the same time to go, and leave the child. But she said, "Is my child a dog, that I should sell him for merchandize? You cannot drive me away; you may beat me, it is true, and otherwise abuse me, but I will still remain. When you married me, you promised to use me kindly as long as I should be faithful to you; that I have been so, no one can deny. Ours was not a marriage contracted for a season, it was to terminate only with our lives. I was then a young girl, and might have been united to an Omawhaw chief; but I am now an old woman, having had two children, and what Omawhaw will regard me? Is not my right paramount to that of your other wife; she had heard of me before you possessed her. It is true her skin is whiter than mine, but her heart cannot be more pure towards you, nor her fidelity more rigid. Do not take the child from my breast, I cannot bear to *hear* it cry, and not be present to relieve it*; permit me to retain it until the spring, when it will be able to eat, and then, if it must be so, take it from my sight, that I may part with it but once."

Seeing her thus inflexible, the trader informed her that she might remain there if she pleased, but that the child should be immediately sent down to the settlements.

The affectionate mother had thus far sustained herself during the interview with the firmness of conscious virtue, and successfully resisted the impulse of her feelings; but nature now yielded, the tears coursed rapidly over her cheeks, and clasping her hands, and bowing her head, she burst into an agony of grief, exclaiming, "Why did the Wahconda hate me so much, as to induce me to put my child again into your power?"

The feelings of the unhappy mother were, however, soon relieved. Mr. Dougherty communicated the circumstances of the case to Major O'Fallon, who immediately and peremptorily ordered the restoration of the child to its mother, and informed the trader that any future attempt to wrest it from her should be at his peril.

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* A mode of expression common to the Indians, who are in the habit of communicating their ideas by allusions to the senses.

As in civilized communities, so amongst the Indians, quarrels sometimes occur. There being no legal tribunal to appeal to, amongst the Missouri Indians, individuals often terminate their animosity by resorting to arms, and relying upon their own valour or address. This extremity is, however, sometimes obviated, by the soothing interference of relatives and friends, or by the violent interposition of a warrior.

Pugilism they despise, regarding it entirely beneath the dignity, even of an ordinary man, saying that it is only fit for the decision of the quarrels of children and squaws, and that when a man is called upon to decide a question by force, he ought to resort to the aid of mortal weapons.

Hard heart, chief of the Ioways, quarrelled with a trader, near the mouth of the Platte, and challenged him immediately to single combat, with any weapons he might choose, either agreeably to the manner of the whites, or to the usual Indian mode, of either combatant availing himself of opportunity or stratagem. The trader refusing to fight, Hard heart departed, declaring he would come again in the morning, in order to put him to death as a coward; "and," said he, "the Wahconda himself will not be able to save you." The trader, for security, assembled around his hut several Oto warriors as a guard, so that when the chief returned agreeably to his promise, to execute his threat, he could not gain admittance. After waiting a long time in vain, he at length sent word to the trader that he forgave him and would not injure him. The trader on receiving this information, having sufficient confidence in his good faith, dismissed his guards; and some time afterward, we observed them riding together, on their return from the Pawnee villages, to which they had accompanied the Oto nation.

About a twelvemonth before our arrival at Engineer Cantonment, Hashea (the Cut-nose) and the Brave, two highly distinguished warriors of the Oto nation, had a very serious quarrel, which their friends could not perfectly adjust, but only succeeded in preventing a personal combat. Since our departure for the Rocky Mountains, Major O'Fallon informs us, that this hostility, still further aggravated by another incident, has terminated fatally. The nephew of the Brave grossly insulted, by his pertinacious addresses, the wife of Hashea, whilst the latter warrior was absent on a war excursion. On his return, being informed of the indignity offered to his wife, he sought the offender, knocked him down with his war club, and beat him with great severity. The Brave was summoned by his friends, who seeing the bruised condition of his relative, vowed revenge. He provided a large sharp-pointed knife, and throwing his bison robe over his arm, by way of shield, he sallied out and passed twice through the village, uttering occasionally, with a loud voice, a challenge to Hashea to come forth, and decide their old quarrel by means of the knife. Hashea feared no man, and would have presented himself before his old enemy at the first call, but was prevented by some friends who were with him in his lodge; these, however, after the lapse of a short time, he contrived to elude, and swiftly sought the Brave. He threw down his blanket, and exclaimed, "You and I cannot live in the same nation; the time has arrived when one of us must die." They then closed in fight. The Brave had much the advantage; he was a large man, and his person was effectually protected by his robe, which received the thrusts of his adversary's knife, whilst at every blow the weapon of the Brave was sheathed in the naked body of the interesting Hashea.

The latter was soon despatched, but as he staggered backwards under the grasp of death, he aimed a final blow at his antagonist, and had the gratification to see his blade enter his neck and pass far downward; at which he uttered a shout of exultation and died. The Brave's wound was mortal, but he lived long enough to see the features of Ietan, the friend of Hashea, bent in sternness upon him, and to hear him lament that the conqueror of his friend, should die without the agency of his arm. The deceased warriors belonged to the two most powerful bands of the nation. Hashea was a near kinsman of the Crenier, leader of one band, and the Brave was a brother of Shongotonga, leader of the other, and principal chief of the Otos. The consequence of the quarrel involved the whole nation, and to avoid farther hostilities the bands separated from each other, into distinct villages, in which situation they now remain.

The designations by which the Omawhaws distinguish their various degrees of consanguinity are somewhat different in meaning from ours. Children universally address their father's brother by the title of *father*, and their mother's brother by that of *uncle*; their mother's sister is called *mother*, and their father's sister *aunt*. The same relative designations extend to the step-parents, relatives, and to those of the grand-parents. The children of brothers and sisters address each other by the titles of brother and sister. Step-parents treat their step-children with as much kindness and attention as their own; and a stranger in the family would not perceive any partiality shown to the latter; indeed the natural parent exacts such a course of conduct from the other, and a separation would probably ensue, from an opposite course being obstinately persevered in, as a parent will on no account suffer his or her offspring to be abused.

Natural children are generally retained by the mother; but if she is willing to part with them, or at her death, they are received into the family of the father, where they experience the same kindness and attention as his other children; but an Indian will consider himself insulted, if he is told that he had no proper father or mother.

Some mothers of natural children will not permit them to visit the father, while she can controul them; they generally remain with the mother, and support her.

A man applies the title of We-hun-guh, or sister-in-law, to his wife's sister, until he takes her as his wife; he also calls his wife's brother's daughter Wehunguh, and may in like manner take her to wife: thus the aunt and the niece marry the same man.

A man distinguishes his wife's brother by the title of Tahong, or brother-in-law, and his son also by the same designation. He calls the wife of his brother-in-law Cong-ha, or mother-in-law.

A woman calls her husband's brother Wish-e-a, or brother-in-law, and speaks of his children as her own. Her husband's sister she distinguishes by the title of relationship, Wish-e-cong, or sister-in-law. Men who marry sisters address each other by the title of brother. All women who marry the same individual, even though not previously related, apply to each other the title of sister.

Remote degrees of consanguineous alliance are distinguished by their various appellatives, and are universally acknowledged.

It is a great singularity in the manners of the Omawhaws, that neither the father-in-law nor mother-in-law will hold any direct conversation with their son-in-law; nor will he, on any occasion, or under any consideration, converse immediately with them, although no ill-will exists between them; they will not, on any account, mention each other's name in company, nor look in each other's faces; any conversation that passes between them is conducted through the medium of some other person.

The Big Elk, Ongpatonga otherwise named Ar-re-cat-ta-wa-ho, which means Big Elk in the Pawnee language, married the daughter of Me-chah-pa, or the Horse-head. One day, on a visit to his wife, he entered the lodge of her father unobserved by him, who was busily engaged in playing with his dog, rubbing him with his hand, and frequently repeating his name, which unfortunately happened to be the same with that of the Big Elk in Pawnee. Mechahpa's wife, hearing her husband repeat this name in the presence of the son-in-law, after making many winks and signs without effect, arose from her seat and struck him violently with her fist upon the back, exclaiming, "You old fool! have you no eyes to see who is present? you had better jump upon his neck, (meaning that of the Big Elk) and ride him about like a dog." "Wah!" ejaculated Mechahpa, in surprise, at the sudden and emphatical salutation, and understanding the meaning of the address, he ran out of the lodge in confusion.

This extraordinary formality is carried to a great length, and is very rigidly observed. If a person enters a dwelling in which his son-in-law is seated, the latter turns his back, covers his head with his robe, and avails himself of the first opportunity to leave the presence. If a person visit his wife, during her residence at the lodge of her father, the latter averts himself, and conceals his head with his robe, and his hospitality is extended circuitously by means of his daughter, by whom the pipe is transferred to her husband to smoke. Communications or queries intended for the son-in-law are addressed aloud to the daughter, who receives the replies of her husband. The same formality is observed by the mother-in-law; if she wishes to present him with food, it is invariably handed to the daughter for him, or if she happens to be absent for the moment, it is placed on the ground, and she retires from the lodge, that he may take it up and eat it. A ten year's separation will not change this custom. The Pawnees have no such formality, and on that account are said to be great fools.

A Frenchman, married and resident with the Omawhaws, one day inadvertently mentioned the name of his father-in-law, in presence of several people, who immediately declared him to be as great a fool as a Pawnee, thus to have so little respect for his father-in-law, as to treat him with as little ceremony as he would a dog.

The more distinguished and respectable the parties are, the more rigidly is this rule observed; and if either of the parties should be treated otherwise, the departure from the observance would be regarded as a mark of disrespect for a trifling fellow.

Fraternal affection is very strong and permanent. The chief and almost exclusive sources of infraction of this natural bias, are adultery with each other's wives, and conflicting intrigues for the attainment of the honour of a chieftain.

Two Omawhaw brothers had stolen a squaw from an individual of their nation, and were on their journey to seek a refuge in the Puncaw village. But they had the misfortune, in a large prairie, to meet with a war-party of Sioux, their implacable enemies. They immediately concealed themselves in a deep ravine, which at bottom was covered with dry reed grass. The Sioux surrounded this spot, and set fire to the windward side of the reeds, in order to drive them out. When the conflagration had nearly reached the fugitives, one of the brothers remarked, that the Wahconda had certainly not created him to be smoked out like a racoon; (the Indians smoke this animal out of hollow trees by kindling a fire at the root;) he urged his brother to attempt his escape in one direction, whilst he would attract the attention of the enemy, by sallying out upon them alone, and endeavouring to destroy as many of them as possible, in anticipated revenge for that death which he considered as inevitable; "One or both of us," said he, "must certainly be sacrificed; save yourself if you can; I will be the victim, and may fortunately receive a death-blow in the conflict, and thus escape the disgrace of captivity." He then rushed forth amongst the Sioux, shot one, and with his knife wounded several before he was dispatched. His brother availing himself of the abstracted attention of the enemy, effected his escape, but the squaw was burned to death. In this magnanimous self-devotion, the gallant brother exhibits an instance of chivalric heroism which would have immortalized a Roman warrior.

The young men are generally coupled out as friends; this tie is very strongly knit in youth, but is usually enfeebled by matrimony or the concerns of more advanced age; yet it is sometimes as lasting as the life of the individuals.

The Omawhaws, as we before observed, preserve no account of their ages; they think that some evil will attend the numbering of their years. Me-chah-pa the Horse-head, who is an intelligent medicine man, asked one of our party, whom he was informed was an eminent medicine man of the white people, amongst many other questions, how old he was; he was answered, about forty-five, at which he expressed his regret that he had lived so long in the world, and to so little purpose.

Old age amongst the Omawhaws is generally loquacious, but it does not seem to be distinguished, as in civilized life, by an accumulation of maladies. Aged Indians, whether male or female, generally continue in apparent good health to the last, and the visitation of death is most frequently sudden and unexpected; an instance of this has already been related, which occurred to old Loutre, an individual of the Missouri nation.

They become bowed and very much wrinkled with age, and their joints become less flexible. But their hair does not so generally change to gray as that of men in a state of civilization. The hair of the sides of the head, which is so frequently shorn or extracted, often assumes the gray appearance at a comparatively early age, and is almost universally of that tint in aged persons; whilst that of the top and back of the head, which is always permitted to attain a moderate length, is simply interspersed with a few grey hairs. Many aged squaws preserve the hair of the usual youthful colour; in others we observe an intermixture of gray, and it may be remarked that the aged of this sex are more frequently gray-haired than the men.

We saw a middle aged woman whose hair had pretty generally changed to gray; but this appearance at her age was so unusual, that the Indians attributed it to her having infracted the injunctions of her medicine by eating forbidden food. [30]

In proportion as persons of either sex approach to the state of superannuation, the respect of their family and acquaintances is withdrawn from them, and they are finally regarded as useless burdens upon the community. They are subjected to the pranks and ridicule of the young people, which, however, they seem rather to invite by drollery, jokes, and stories, than to discourage by a repulsive demeanour.

The aged men contrive to render themselves useful by assisting the squaws in their culinary operations, and by haranguing; a service for which their loquacity eminently qualifies them.

The aged squaws can generally assist in light employments, such as making and mending mockasins, leggings, stringing beads, &c.; but during the rigours of winter they are generally seated near the door of the travelling lodge, partially defended from the cold by an old ragged robe, and occupied with the menial service of pushing up the half-burned pieces of wood to the fire, and driving out the dogs; in this situation they are more exposed to the weather than any other inmate of the tenement.

Though thus neglected, the aged are not permitted to suffer from hunger, when in the village, if food can be obtained. But when they become helpless on a march, and the transporting of them is attended with much difficulty, it is considered unavoidable to abandon them to their fate; with this view a small grass shelter is erected for them, in which some food is deposited, together with wood, and water. When thus abandoned by all that is dear to them, their fortitude does not forsake them, and the inflexible passive courage of the Indian sustains them against despondency.] They regard themselves as entirely useless, and as the custom of the nation has long led them to anticipate this mode of death, they attempt not to remonstrate against the measure, which is, in fact, frequently the consequence of their earnest solicitation.

In this situation the devoted man sings his war-songs to the Wahconda, narrating the martial exploits of his youth, and finally chaunts his death-song.

If on the return of the nation from the hunt, he is still living, his family or friends take him with them to the village, and guard him from want until the succeeding general expedition.

CHAPTER XII.

DISEASES.—MEDICAL AND SURGICAL KNOWLEDGE.—DRUNKENNESS, AND OTHER VICES.—IDEAS OF GOD, AND OF A FUTURE STATE.—SUPERSTITION, AND PRACTICE OF THE MAGI.—EXPIATORY TORTURES.

THE Omawhaws endure sickness and pain with great fortitude; most of them, when thus afflicted, rarely uttering a murmur. Their catalogue of diseases, and morbid affections, is infinitely less extensive than that of civilized men.

Rheumatism is rare, and gout appears to be unknown. No case of phthisis or jaundice fell under our observation. King's-evil is not uncommon, and although they have no reliance on the sanative touch of a king or chief, yet, as their practice seems confined to an inefficacious ablution with common water, many fall victims to the disease. Many are also afflicted with ulcers, which sometimes terminate fatally. Decayed teeth are rare. Plica polonica is unknown. Baldness seems to be also unknown, the hair being always retained, however advanced the age of the individual.

Nymphomania occurred in the person of a widow, who was thus afflicted about two months; her symptoms were attended with an effusion of blood from the nose. On her recovery, she attributed the disorder to the operation of some potent mystic medicine.

Hypochondriasis seems to be unknown. Canine madness also appears to be without an example, their dogs not having yet been visited by the disease.

They are rarely afflicted with dysentery, though children are sometimes subject to it in consequence of eating unripe fruits, such as plums, grapes, and maize. They are never known to be subject to the *coup de soleil,* although they travel for days and even weeks over the unsheltered prairies, without any covering whatever for the head, which is consequently exposed to the full radiance of the sun, both in a state of activity and quiescence. White men residing with them, and who have partaken in their hunts, and consequent insolation, have been visited with this distressing affection, although their heads were protected invariably by hats or handkerchiefs.

The cuticle of these Indians is not known to have been acted upon by contact with poisonous plants, though white men travelling with them have experienced the effects of the usual deleterious properties of the poison vine (rhus radicans,) which is, to a certainty, abundant in proper situations in the Missouri country. What effects would result from the application of this plant to the only part of the body of the Indian which is never exposed to the direct influence of external causes, is a subject deserving of experimental inquiry.

The hare-lip sometimes occurs, but it may be properly considered as still more rare than amongst white people.

Frosted limbs are treated by immersion in cold water, so as gradually to restore the lost temperature of the part. The magi also perform over them their mystic rites, amongst which the only topical application is made by chewing some roots and blowing the fragments, and accompanying saliva violently upon the part, with many antic capers.

Goiture and wens are not known. Fevers, and fever and ague, are exceedingly rare. Ophthalmic diseases, and casualties affecting the eye, are frequent. The eyes of children are sometimes injured or destroyed by missiles, in incautious play or juvenile rencontres. But blindness is more frequently the effect of the gradual operation of disease. The eyes become sore and the lids inflamed ; white opake maculæ, after some time, appear in the eye, which enlarge until they cover it entirely, and prevent the ingress of light. It is probable that they possessed no rational remedy for this evil previously to their acquaintance with the traders, excepting the extracting of blood from the temple by their process of cupping; the traders, however, have taught them to remove the opacity, by blowing burnt alum into the eye through a quill, a remedy so familiar in the veterinary art. To this disease children as well as adults are obnoxious.

Another ophthalmia, which also results in the destruction of the faculty of vision, commences with a superabundant secretion of the fluid of the lachrymal duct, succeeded by inflammation of the lids ; the sight becomes gradually debilitated, until at length the pupil assumes an opake white appearance ; probably fistula lachrymalis.

Temporary blindness, which sometimes eventuates in permanent loss of sight, occurs during the winter to incautious travellers who pass over the prairies covered with snow, from which the solar light is so brilliantly reflected. A party that accompanied Mr. Dougherty on a journey, being thus exposed, became unable to distinguish objects, and had not his sight been preserved, they might never have regained their stockade.

The blind are not neglected by their family and friends; on the contrary, we had several opportunities of observing them to be well clothed and fed, and much at their ease. When superannuated, however, they are not exempted from the fate attendant on that state.

An affection; or pain in the breast, distinguished by the name of Mong-ga-ne-a, seems to be the consequence of excessive indulgence in tobacco, and the habitual inhaling of the smoke of it into the lungs. In their attempts to alleviate this complaint, the magi affect to extract from the part, by suction, balls and pellets of hair, and other extraneous substances, which they had previously concealed in their mouths for the purpose of deceiving the patient.

An individual applied to one of our party to cure him of this pain, but being advised to desist from the indulgence of tobacco smoking, he appeared rather willing to bear with his disease.

They sometimes say that their liver pains them, a disorder which they call Ta-pe-ne-a.

They are not exempt from catarrhs, the consequence of great exposure to sudden vicissitudes of temperature; a disease similar to the influenza is sometimes prevalent, and known by the name of Hoh-pa.

A deaf and dumb boy occurred in the Oto nation; an adult with a curved spine; and another with an inflexible knee, the leg forming a right angle with the thigh. But we have not observed any one of them with either eye deviating from the true line of vision.

The medical and surgical knowledge of the Omawhaws is very inconsiderable, and what there is, is so much blended with ceremonies, which to us appear superstitious, inert, and absurd, that it would seem, that, with the exception of a few instances, they have no reasonable mode of practice.

Sweating-baths are much in estimation, and are used for the cure of many ailments. These are temporary constructions, generally placed near the edge of a water-course; they are formed of osiers, or small pliant branches of trees, stuck into the soil in a circular arrangement, bent over at top so as to form a hemispherical figure, and covered in every part with bison robes. They are of different sizes, some are calculated to contain but a single individual, whilst others afford space for five or six at once. The invalid enters with a kettle of water and some heated stones, on which the water is sprinkled until the steam produced is sufficient for his purpose. When they conceive that his perspiration has been as profuse as necessary, he is taken out and plunged into the water, and even if the stream be covered with ice, this is broken to admit the patient. He is not subjected a second time to the action of the steam, but covers himself with his robe and returns home.

We did not learn that they possessed any knowledge of cathartic or emetic medicines. But as a substitute for the latter, a feather is thrust down the throat, until its irritating effect produces vomiting.

For the cure of cholic, warm topical applications are made, and the abdomen is kneaded with the fist.

They have no substitute whatever for opium, and we do not know that they have any for mercury.

For the alleviation of an internal local pain, a severe remedy is sometimes resorted to. A portion of the medullary substance of a plant, is attached to the skin over the part affected, by means of a little spittle; it is then touched with fire, and burns slowly down to the skin, upon which a vesication is soon produced, and accomplishes the object intended, of removing, at least for a time, the internal pain to the surface. This seems to be the only species of actual cautery made use of.

The Indians, who reside in the upper regions of the Missouri, practise bleeding for various ailments. This operation is sometimes performed with a knife or arrow point. At other times, and not unusually, a sharp stone is placed upon the part from which blood is to be drawn, and it is then struck with a stick, much in the same manner that veterinarians operate with the phlegm. They thus bleed in the arm, thigh, leg, &c.

They never dissect the human body, expressly for the purpose of acquiring a knowledge of its structure; but they have a general idea of the position of the vitals and viscera, acquired upon the field of battle, by their custom of hacking the carcasses of the slain; a knowledge which teaches them on what part of the body of an enemy to strike, in order that the wound may be mortal.

Gun-shot wounds are administered to by the magi, who powwow over them, rattle their gourds and sing, whilst they chew roots and blow out the fragments and saliva on the part. But the efficient practice in cases of wounds of this nature, is their system of depuration by means of suction; they apply their lips to the wound, and draw out the pus as it is secreted; by this mode of treatment they seem to be very successful in the cure of gun-shot wounds.

Amputation of limbs is not practised in their surgery.

The wound produced by the arrow, is treated much in the same manner with that of the gun-shot, after the weapon is thrust through the part, in the direction in which it entered; or, if this cannot be accomplished, the arrow is withdrawn, and the head or point being very slightly attached to the shaft, remains in the body, unless the wound is superficial, in which case it is cut out with a knife.

A broken limb is extended to its place, and enveloped with a leathern strap; the union generally takes place promptly, but the member usually remains more or less bent or crooked.

They have no rational mode of treating the scalp wound. A squaw who had been scalped, covered the part, after its edges had healed, with a peruke made of bison hair, until the hair on the other parts of her head became of sufficient length to conceal the deformity.

Dislocated members are reduced by extension, but with so little art, that they are frequently unsuccessful, and the limb remains permanently disjointed.

The Omawhaws are entirely destitute of all condiments, with the exception of salt, which, however, in their eating, they rarely use.

Confirmed insanity appears to be unknown.

Every person, in any degree conversant with Indian manners and customs, is struck with their proneness to that most abominable and degrading of all vices, intoxication from the use of spirituous liquors. The Missouri Indians, collectively, form no exception to this general trait. A member of the Pawnee war party, which we so unfortunately encountered near the Konza village, was more solicitous to obtain a draft of this pernicious beverage, than to possess any other article within his view. We, however, persisted in refusing it to him, although he fell upon his knees, and laid his hands convulsively upon his breast and stomach, crying out, with a voice and manner of earnest supplication, "Whiskey, whiskey." The vice of drunkenness is yet, however, extremely rare in the Pawnee, as well as the Konza nation. But the Omawhaws are much addicted to it, and, with the exception of the chiefs, the indulgence does not, in any very considerable measure, degrade them in the estimation of their countrymen, who regard it as a delightful frolick; unless, indeed, the indulgence is permitted to grow into a habit.

To this cause, more especially than to any other, is perhaps attributable the depreciation of the influence of Ongpatonga, notwithstanding the efforts of his comparatively superior intellectual abilities.

The greatest offences and insults are overlooked if committed in this state, and even murder is palliated by it. The actions of drunken Indians, are as ridiculous and puerile as those of civilized drunkards; chiefs, warriors, and common men, roll indiscriminately on the earth together, or dance, caper, laugh, cry, shout, fight, or hug and kiss, and rub each other with their hands, in the most affectionate or stupid manner. If in the vicinity of white people, they appoint some of their number to remain sober, in order to prevent injury or insult being offered to them.

The squaws sometimes tie them with cords, in order to preserve the peace, and are thanked for their precaution, when the subjects return to the dignity of reason.

Squaws, however, will themselves get drunk on certain occasions, and children are frequently intoxicated with liquor given them by the parents.

Whiskey, which is the only spirituous liquor they are acquainted with, is furnished to them freely by the traders; and the existing law of the United States, prohibiting the sale of it to the natives, is readily evaded, by presenting it to them with a view of securing their custom, not in direct, although implied exchange for their peltries. Nor is this greatest of evils in the power of the agent to remedy; and until traders are effectually interdicted, by law, from taking any whiskey into the country, even for their own consumption, it must, in defiance of his authority, continue to exist.

Whiskey is distinguished by the appellation of Pa-je-ne, or *fire-water*, the letter *j* having the French sound in pronunciation. The state of intoxication is called Ta-ne, a word which has a singular affinity with that by which they distinguish meat broth, or *meat water;* so great indeed is the similarity in sound between them, that to our ear they appear identical.

Intoxicating drinks do not appear to be ever made use of by the Omawhaws, for superstitious purposes.

This people believe firmly in an existence after death; but they do not appear to have any definite notions as to the state in which they shall then be. And although they say that many reappear after death to their relatives, yet such visitants communicate no information respecting futurity. They consist of those only who have been killed either in battle with the enemy, or in quarrels with individuals of their own nation, and their errand is to solicit vengeance on the perpetrators of the deed.

Futurity has no terrors to the dying Omawhaw, as he has no idea of actual punishment beyond his present state of existence. He, however, regrets the parting from his family and friends, and sometimes expresses his fears that the former will be impoverished, when his exertions for their support shall be withdrawn.

The Wahconda is believed to be the greatest and best of beings, the creator and preserver of all things, and the fountain of mystic medicine. Omniscience, omnipresence, and vast power are attributed to him, and he is supposed to afflict them with sickness, poverty, or misfortune, for their evil deeds. In conversation he is frequently appealed to as an evidence of the truth of their asseverations, in the words Wahconda-wa-nah-kong, the Wahconda hears what I say; and they sometimes add Mun-ekuh-wa-nah-kong, the earth hears what I say.

Whatever may be the notions of other Indian nations, we did not learn that the Omawhaws have any distinct ideas of the existence of the devil; or at least we always experienced much difficulty and delay, when obtaining vocabularies of this and some other languages in ascertaining corresponding words for *Devil* and *Hell;* the Indians would consult together, and in one instance the interpreter told us they were coining a word.

They say that after death, those who have conducted themselves properly in this life, are received into the Wa-noch-a-te, or town of brave and generous spirits; but those who have not been useful to the nation or their own families, by killing their enemies, stealing horses, or by generosity, will have a residence prepared for them in the town of poor and useless spirits; where, as well as in the good town, their usual avocations are continued.

Their Wahconda seems to be a Protean god; he is supposed to appear to different persons under different forms. All those who are favoured with his presence become medicine men or magicians, in consequence of thus having seen and conversed with the Wahconda, and of having received from him some particular medicine of wondrous efficacy.

He appeared to one in the shape of a grizzly bear, to another in that of a bison, to a third in that of a beaver, or owl, &c., and an individual attributed to an animal, from which he received his medicine, the form and features of the elephant.

All the magi, in the administration of their medicine to the sick or afflicted, mimic the action and voice, variously exaggerated and modified, of the animal, which, they say, is their respective medicine, or in other words, that in which the Wahconda appeared to them.

When a magician is called to attend a sick person, he makes preparations for the visit by washing and painting with red clay; some of them dress fantastically, but others retain their ordinary apparel, which does not distinguish them from their neighbours; they take with them a dried gourd or skin, in which are some pebbles or plumstones, to make a rattling noise; the medicine bag is also an indispensable requisite, not for the active properties of its contents, but for the mystic virtues ascribed to them.

When in presence of his patient, he assumes the proper gravity of deportment, and commences his operations by smoking his pipe, and talking to his Wahconda; after this preparatory ceremony, the medicine bag is opened, and the contents displayed, consisting of white and red earth, herbs entire or pulverized, &c. Portions of these are mixed with warm water, in small wooden cups, with which he is provided. Then, with a due degree of solemnity, he advances to his patient, and inquires into the nature of his ailment; he feels the part affected with his hand, and in case of local pain, he scarifies the part with a flint, and proceeds to suck out the blood, having previously taken a small quantity of water in his mouth. He applies his lips to the wound, and sucks with great force, drawing a considerable quantity of blood, which he occasionally ejects into a bowl, in which some dirt or ashes had been previously sprinkled.

He makes much noise in the operation, by inhaling and expelling the air forcibly through his nostrils, and at the same time jerks his head from side to side, tugging at the part to facilitate the process. The depletion produced by this method, is sometimes so considerable that the patient becomes relaxed and pallid.

It has been remarked, that those practitioners have very tumid lips, and this remark is verified in those of Mon-cha-wahconda, or medicine grizzly bear, whom we have frequently seen.

If the patient has no local pain, the magician administers some of his simples, sometimes internally, but generally by friction between his warmed hands, and the breast or abdomen of the patient. At intervals during this operation, and after the termination of it, he rattles his gourd with violence, singing to it with great vehemence, and throwing himself into grotesque attitudes. All this is sometimes daily repeated, until the convalescence or death of the patient.

A wealthy man, when sick, will sometimes send to a great distance for a celebrated practitioner, who, if not already engaged, removes with his family and lodge to the vicinity of the afflicted.

The compensation for all this attendance and powwowing, is proportioned to the violence and duration of the complaint, and to the wealth of the individual; it is frequently exorbitant, and consists of horses, kettles, blankets, &c., which, although they are never demanded, yet the magician does not fail to allude to some of them as objects of his wishes, and the gratitude of the patient seldom fails on this occasion. If the patient dies, notwithstanding all this necromancy, he is said to be summoned by the Wahconda, and the fee or present to the magician is made by the relatives or friends of the deceased.

These men sometimes pretend to the spirit of prophecy. One of them ventured to predict, that two squaws who had recently married white men, would die in the course of a very short time, which he specified. The squaws being much alarmed at the prospect of approaching death, took with them some tobacco and other presents, and went in search of the prophet in order to prevail upon him to intercede for them with the Wahconda, and avert their doom. The husband of one of the squaws, a citizen of the United States, hearing of the occurrence, went to the lodge of the magician. He was surprised to see there the squaws perfectly naked before the magician, who had provided himself with a large kettle of warm water, and was himself engaged in squirting the water from his mouth over their persons. The husband, incensed at what appeared to him to be nonsense and imposition, kicked over the kettle of holy water, and drove the squaws home to their lodges; but the magician, having received the presents, which were the objects of his swindling cunning, pretended that his incantation had had the desired effect with the Wahconda, inducing him to spare their lives.

Many are the impostures which these priests practise on the credulity of the people. And although they are frequently defeated in their attempts to deceive, and justly punished for their hypocritical villainy, yet the advantage of experience seems to profit them little, and deception, practised under a new garb, often attains its ends. How can we wonder at this facility, with which a simple people are blinded, through the medium of their superstitious faith, when we know that infinitely more monstrous absurdities obtain the inconsiderate assent, or excite the fears of thousands of civilized men, in the most populous and enlightened cities of Europe and America, and that the horse-shoe, even at this day, is frequently seen attached to the threshold of a door, as a security against the entrance of a witch?

One of these magi acquired a high repute in several of the Missouri nations, by impressing them with the belief, that his body was indestructible to human power, and that if cut into a thousand fragments, and scattered to the winds, these portions would all promptly assemble together again, and become revivified, so that he would receive no injury from the operation. Trusting to his fame, on some slight provocation, he killed a squaw in the midst of her own people, and with the most unbounded confidence, surrendered himself to her exasperated relatives, declaring with exultation that they possessed not the power to harm him.

Unexpectedly, however, they put his vaunted supernatural constitution to the test, by dividing his body into pieces, and scattering them about the vicinity of the village.

They are so entirely habituated to practising the arts of deception, that it would seem they sometimes persuade themselves that what was at first only feigned, is in truth reality, and that their magic absolutely possesses its attributed healing virtue. One of these men, being on a visit to the Pawnee villages, was present at a kind of grand incantation, during which many extraordinary feats were exhibited. He there saw, for the first time, the mountebank trick, of appearing to cut off the tongue, and afterwards replacing the severed portion without a wound. "There," said Katterfelto, "your medicine is not strong enough to enable you to perform this operation." The stranger, jealous of his national honour, and unwilling to be exceeded, unhesitatingly drew forth his knife, and actually cut off nearly the whole of his tongue, and bled to death before their eyes.

In the country of the Crow Indians, (Up-sa-ro-ka,) Mr. Dougherty saw a singular arrangement of the magi. The upper portion of a cotton-wood tree was implanted with its base in the earth, and around it was a sweat house, the upper part of the top of the tree arising through the roof. A gray bison-skin, extended with oziers on the inside so as to exhibit a natural appearance, was suspended above the house, and on the branches were attached several pairs of children's mockasins and leggings, and from one of the limbs of the tree, a very large fan made of war eagle's feathers was dependent.

The Missouri Indians believe earthquakes to be the effect of supernatural agency, connected, like the thunder, with the immediate operations of the Master of Life. The earthquakes which, in the year 1811, almost destroyed the town of New Madrid of the Mississippi, were very sensibly felt on the upper portion of the Missouri country, and occasioned much superstitious dread amongst the Indians. During that period, a citizen of the United States resided in the village of the Otos, trading for the produce of their hunts. One day he was surprised by a visit of a number of Otos in anger. They said that a Frenchman, who was also trading in the village, had informed them, that the Big-knives had killed a son of the Master of Life; that they had seen him riding on a white.horse in a forest country, and being of a sanguinary disposition, they had waylaid and shot him. And it was certainly owing to this act that the earth was now trembling before the anger of the great Wahconda. They believed the story implicitly, and it was with no little difficulty that the trader divested his own nation of the singular crimination.*

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* Many individuals attach small bags, of the size of the end of the thumb, to various parts of their dress, as talismanic preventives

As connected with the superstitions of the Missouri Indians, we may mention some anecdotes that came to our knowledge. First, of the Me-ma-ho-pa or medicine stone of the *Gros ventres*, or Minnetarees. This is a large, naked, and insulated rock, situate in the midst of a small prairie, at the distance of about two days' journey, southwest of the village of that nation. In shape it resembles the steep roof of a house. The Minnetarees resort to it, for the purpose of propitiating their Man-ho-pa or Great Spirit, by presents, by fasting, and lamentation, during the space of from three to five days.

An individual, who intends to perform this ceremony, takes some presents with him, such as a gun, horse, or strouding, and also provides a smooth skin, upon which hieroglyphics may be drawn, and repairs to the rock accompanied by his friends and magi. On his arrival, he deposits the presents there, and after smoking to the rock, he washes a portion of the face of it clean, and retires with his fellow devotees to a specified distance. During the principal part of his stay, he cries aloud to his god to have pity on him; to grant him success in war and in hunting; to favour his endeavours to take prisoners, horses, and scalps from the enemy. When the appointed time for lamentation and prayer has elapsed, he returns to the rock; his presents are no longer there, and he believes them to have been accepted and carried off by the Manhopa himself. Upon the part of the rock, which he had washed, he finds certain hieroglyphics traced with white clay, of which he can generally interpret the meaning, particularly when assisted by some of the magi, who were no doubt privy to the whole transaction. These representations are supposed to relate to his future fortune, or to that of his family or nation; he copies them off with pious care

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of personal injury. The custom of sacrificing their clothes to the medicine is unknown to the Omawhaws, but it is practised with the Upsaroka and some other nations.

and scrupulous exactness upon the skin which he brought for the purpose, and returns to his home, to read from them to the people, the destiny of himself or of them. If a bear be represented, with its head directed towards the village, the approach of a war party; or the visitation of some evil, is apprehended. If, on the contrary, the tail of the bear be towards the village, nothing but good is anticipated, and they rejoice. They say that an Indian, on his return from the rock, exhibited to his friends, on his hieroglyphical chart, the representation of a strange building, as erected near the village; they were all much surprised and did not perfectly comprehend its meaning; but four months afterwards, the prediction was, as it happened, verified, and a stockade trading house was erected there, by the French trader Jessaume.

Lewis and Clark inform us that the Mandans have a similar oracle.

At the distance of the journey of one day and a half from Knife-creek, which divides the larger and smaller towns of the Minnetarees from each other, are situate two conical hills, separated by about the distance of a mile. One of these hills was supposed to impart a prolific virtue to such squaws as resorted to it for the purpose of crying and lamenting, for the circumstance of their having no male issue.

A person one day walking near the other mount, fancied he observed upon the top of it, two very small children. Thinking they had strayed from the village, he ran towards them to induce them to return home; but they immediately fled from him, nor could his utmost speed overtake them, and in a short time they eluded his sight. Returning to the village, the relation of his story excited much interest, and an Indian set out next day, mounted on a fleet horse, to take the little strangers. On the approach of this individual to the mount, he also saw the children, who ran away as before, and although he endeavoured to overtake them by lashing the horse into *his* utmost swiftness, the children left him far behind. But these children are no longer to be seen, and the hill once of singular efficacy in rendering the human species prolific, has lost this remarkable property—A change, which the magi attribute to the moral degeneracy of the present generation of the *Gros ventres*. Thus, like many of the asserted supernatural occurrences in the civilized world, these are referred back, in their obscure tradition, "out of harm's way."

Lewis and Clark, however, inform us, (p. 53.) that the Sioux have a belief somewhat similar, respecting a hill near Whitestone River, which they fable to be at present occupied by a small and dangerous race of people, about eighteen inches high, and with remarkably large heads, who, having killed three Omawhaws a few years since, have inspired all the neighbouring Indians with a superstitious dread. Although those intrepid travellers visited the haunted hill, they were happy enough to escape the vengeance of its Lilliputian inhabitants.

With this absurd, but somewhat poetical fable, may be classed the asserted discovery of Lilliputian skeletons of men on the banks of the Merameg river, and the osteological acumen of the discoverers of those relics, may derive all the support which their theory is susceptible of receiving, from the story of these visionary beings.

Annually, in the month of July, the Minnetarees celebrate their great medicine dance, or dance of penitence, which may well be compared with the Currack-pooja of the expiatory tortures of the Hindoos, so often celebrated at Calcutta. On this occasion a considerable quantity of food is prepared, which is well cooked, and served up in their best manner. The devotees then dance and sing to their music at intervals, for three or four days together in full view of the victuals, without attempting to taste of them. But they do not, even at this time, forego their accustomed hospitality. And if a stranger enters, he is invited to eat, though no one partakes with him. On the third or fourth day, the severer expiatory tortures commence, to which the preceding ceremonies were but preludes. An individual presents himself before one of the officiating magi, crying and lamenting, and requests him to cut a fillet of skin from his arm, which he extends for that purpose. The devout operator thrusts a sharp instrument through the skin near the wrist, then introduces the knife, and cuts out a piece of the required length, sometimes extending the excision entirely to the shoulder. Another will request bands of skin to be cut from his arm. A third will have his breast flayed, so as to represent a full moon or crescent. A fourth submits to the removal of concentric arcs of skin from his breast. A fifth prays the operator to remove small pieces of skin from various indicated parts of his body; for this purpose an iron bodkin is thrust through the skin, and the piece is cut off, by passing the knife under the instrument.

Various are the forms of suffering which they inflict upon themselves. An individual requests the operator to pierce a hole through the skin of each of his shoulders, and after passing a long cord through each of these holes, he repairs to a Golgotha at some distance from the village, and selects one of the bison skulls collected there. To the chosen cranium he affixes the ends of his cords, and drags it in this painful manner to the lodge, round which he must go with his burden, before he can be released from it. No one is permitted to assist him, neither dares he to put his own hands to the cords, to alleviate his sufferings. If it should so happen that the horns of the cranium get hooked under a root or other obstacle, he must extricate it in the best manner he can, by pulling different ways, but he must not touch the rope or the head with his hands, or in any respect attempt to relieve the painful strain upon his wounds, until his complete task is performed.

Some of the penitents have arrows thrust through various muscular parts of their bodies, as through the skin and superficial muscles of the arm, leg, breast, and back.

A devotee caused two stout arrows to be passed through the muscles of his breast, one on each side, near the mammæ. To these arrows cords were attached, the opposite ends of which were affixed to the upper part of a post, which had been firmly implanted in the earth for the purpose. He then threw himself backward, into an oblique position, his back within about two feet of the soil, so as to depend with the greater portion of his weight by the cords. In this situation of excruciating agony, he continued to chaunt and to keep time to the music of the gong, until, from long abstinence and suffering, he fainted. The bystanders then cried out, "Courage, courage," with much shouting and noise; after a short interval of insensibility he revived, and proceeded with his self-inflicted tortures as before, until nature being completely exhausted, he again relapsed into insensibility, upon which he was loosed from the cords, and carried off amidst the acclamations of the whole assembly.

Another Minnetaree, in compliance with a vow he had made, caused a hole to be perforated through the muscles of each shoulder; through these holes cords were passed, which were, at the opposite ends, attached by way of a bridle to a horse, that had been penned up three or four days without food or water. In this manner, he led the horse to the margin of the river. The horse, of course, endeavoured to drink, but it was the province of the Indian to prevent him, and that only by straining at the cords with the muscles of the shoulder, without resorting to the assistance of his hands. And notwithstanding all the exertions of the horse to drink, his master succeeded in preventing him, and returned with him to his lodge, having accomplished his painful task.

The Wolf chief, one of the most eminent of the warriors of the upper village of the Minnetarees, on one occasion, sat five days, singing and lamenting, without food, on a small insulated and naked rock in the Missouri river. And it is firmly believed that he did not even palliate his urgent wants by tasting the water during this long probation.

Many of the Minnetarees believe that the bones of those bisons, which they have slain and divested of flesh, rise again clothed with renewed flesh, and quickened with life, and become fat, and fit for slaughter the succeeding June. They assert that some of their nation, who were formerly on a hunting excursion, lost one of their party, a boy, and returned to the village lamenting his loss, and believing him to have been killed by the Sioux nation, with whom they were then at war. Some time afterward, a war-party was assembled, that departed to revenge the supposed murder of the boy. During their journey, they espied a bison, which they pursued and killed. When lo! on opening the abdomen of the animal, what was their astonishment to observe the long-lost boy, alive and well, after having been imprisoned there one entire year. Relieved from his animated prison-house, he informed them, that, when he left his hunting companions, he proceeded onward a considerable distance, until he was so fortunate as to kill this bison. He removed the flesh from one side of the animal, and as a rainy inclement night was approaching, he concluded to take shelter within the body of the animal, in place of the viscera, which he had taken out. But during the night, whilst he slept, the flesh of the bison that he had cut off, grew over the side again, and effectually prevented his getting out, and the animal being restored to life, he had thus been pent up ever since.

Such anecdotes, however puerile and absurd they may be, if characteristic, lead us to a more accurate and complete knowledge of the manners and habits of the people, than still more copious general remarks and reflections.

The Minnetarees, in common with several other nations of our Indians, have the strange tradition of their origin, that they formerly lived under ground. "Two boys," say they, "strayed away from them, and absented themselves several days. At length they returned and informed the nation that they had discovered another world, situate above their present residence, where all was beautiful and light. They saw the sun, the earth, the Missouri, and the bison. This account so delighted the people, that they immediately abandoned their subterranean dwelling, and, led by the boys, arrived on the surface of the earth, at the spot which their villages now occupy, and where they have dwelt ever since.

"Soon after they had established themselves in this new world, a party of strange men appeared mounted on horses. They attacked these wonderful Centaurs with their bows and arrows, and succeeded in killing one of them, on which the others fled. Not at first perceiving that the man and horse were two distinct animals, they were surprised to see the former fall to the earth, as if one part of the compound animal was dead and the other part still active, having received no injury. They at length succeeded in securing the horse, and after admiring the beauty of his form, and becoming familiar with him, they proceeded to tie one of their young men upon his back with cords, that he might not fall off; the horse was then led cautiously by the bridle, until finally he became sufficiently fearless to ride alone."

They seem to have full faith in the notion that, at their death, they will be restored to the mansions of their ancestors under ground, from which they are intercepted by a large and rapid watercourse. Over this river, which may be compared to the Styx of the ancients, they are obliged to pass on a very narrow footway. Those Indians who have been useful to the nation, such as brave warriors or good hunters, pass over with ease, and arrive safely at the A-pah-he, or ancient village. But the worthless Indians slip off from the bridge or footway, into the stream that foams beneath in the swiftness of its course, which hurries them into oblivion, or Lethe. The Mandans, according to Lewis and Clarke, have a tradition somewhat similar, and it strongly reminds us of the Alsirat of Mahomet, over which, it was supposed, that great leader was to conduct his Moslems to the bliss of futurity, whilst the unworthy were precipitated into the gulf which yawned beneath it.

APPENDIX A.

ANIMALS.

A Catalogue of the Names of Animals, which we observed at Engineer Cantonment, or at other indicated places, on our journey to that post.

MAMMALIA.

Vespertilio novaboracensis, L. — New-York bat.
——— *Carolinus, Geoff.* — Carolina bat.
Scalops aquaticus — Mole.
Ursus Americanus, (gularis, Geoff.) — Black bear.
Procyon lotor — Racoon.
Taxus labradoricus — Badger.
Mustela minx — Mink.
——— *vison.*
Mephitis putorius (chinche, Buff. Cuv.) — Skunk.
Lutra (mustela lutra Braziliensis, Gm. Cuv.) — Otter.
Canis — Indian dog.
—— *lycaon* — Black wolf.
—— *virginianus* — Red fox.
—— *cinereo-argenteus* — Gray fox.
Felis concolor — Cougar.
—— *rufa* — Bay lynx.
Didelphius virginiana — Opossum.
Castor fiber — Beaver.
Ondatra Zibethicus — Musk-rat.
Gerbillus Canadensis — Leaping-mouse.
Arctomys monax — Maryland marmot.
Mus agrarius? — Rustic mouse.
Arvicola Zanthognatha, Leach — Meadow mouse (on the Ohio).

Mus musculus — introduced by our expedition.
Pseudostoma bursaria — Pouched rat.
Sciurus cinereus — Gray squirrel.
——— *capistratus* — White-nosed do.
——— *striatus* — Ground do.
——— *nigra* — Black. do.
Lepus Americanus — Rabbit.
Cervus major — Elk.
——— *Virginianus* — Virginian deer.
Antilocapra Americana, Ord. — Prong-horned antelope.
Bos bison, Gmel. — Bison.

BIRDS.

Vultur (Cathartes Illig.) aura — Turkey buzzard.
Falco (Haliætus, Sav.) leucocephalus—Bald eagle.
——— *(Pandion, Sav.) haliætus?* — Fish-hawk.
——— *(Accipitur, V.) ruficaudus, Vieil. (F. Borealis, L. Wilson)* — American buzzard, Lath.
——— *(Circus, Bech.) uliginosus* — Marsh-hawk.
——— *Buteo (galinivorus, Vieil.* — Great hen, H.
——— *(Milvus, Bech.) furcatus* — Swallow-tailed falcon, Lath.
——— *(Tinnunculus, Vieil.) sparverius* — American sparrow-hawk.
——— *(Aquila, Briss.) fulvus* — Ring-tailed eagle, Wilson; war-eagle of the Omawhaws.
——— *lineatus, Gm. Wils.*—Red-shouldered hawk. Mississippi.
——— *Mississippiensis, Wilson* — Mississippi kite.
——— *velox, Wilson* — Sharp-shinned hawk.
——— *Pennsylvanicus, Wilson* — Slate-coloured hawk.
Strix (Otus, Cuv.) otus — Long-eared owl.
——— *(do. do.) Virginiana* — Virginian-eared owl, Lath.
——— *(do. do.) asio* — Red-eared owl, Lath.— Screech-owl.

Strix (*Ulula, Cuv.*) *nebulosa*—Barred-owl. Lath.
—— (*Noctua, Savig.*) *phalænoides, Dand. Vieil.*
—— (*do.* *do.*) *passerina, Wilson.*
—— (*do.* *do.*) *Hudsonia*—Hawk-owl, Wilson.
—— (*Bubo, Cuv.*) *bubo*—Great owl.
Lanius borealis, Vieil.—Great American shrike, Wilson.
Tanagra Ludoviciani, Wils.—Louisiana tanager.
———— *rubra*—Scarlet tanager.
Musicapa (*Tyrannus, Cuv.*) *pipiri, Vieil.*—Tyrant fly-catcher, Wilson.
———— (*Tyrannus, Cuv.*) *Ludovicianus*—Louisiana fly-catcher, Lath.
———— *Canadensis, Gm. Wilson.*—Canada fly-catcher.
———— (*Icteria, Vieil. Pipra. Wilson,*) *viridis, L.* Yellow-breasted chat, Wils.
———— *cantatrix Bartram, Wils.*—White-eyed fly-catcher.
———— (*Mucipeta, Cuv.*) *ruticilla*—American red-start, Wilson.
———— *olivacea*—Red-eyed fly-catcher, Wils.
———— *novaboracensis, Gm.*—Green black-capt fly-catcher, Wilson.
———— *fusca*—Pewee fly-catcher, Wilson.
Ampelis (*Bombycivora, Temm.*) *Carolinensis, Briss.*—Cedar-bird, Wilson.
Turdus rufus—Ferruginous thrush.
——— *felivox, Vieil.*—Catbird.
——— *fuscus*—Brown thrush.
——— *pollyglottus*—Mocking bird.
——— *aurocapillus*—Golden crowned thrush.
——— *migratorius*—Red-breasted thrush.
——— *aquaticus, Wils.*—Water thrush.
Sylvia solitaria, Wils.—Blue-winged yellow warbler.
——— *sialis*—Blue bird.
——— *striata, Wilson*—Black poll warbler.

Sylvia Ludoviciana, L. — Blue yellow-backed warbler, Wilson.
——— (*Troglodites, Cuv.*) *troglodites? Wilson,* — Winter wren.
——— *azurea, Steph. cærulea, Wils.* — Cærulean warbler.
——— *æstiva, Lath.*
Certhia Caroliniana, Lath. Wils. — Great Carolina wren.
——— *palustris, Wils.* — Marsh wren.
Hirundo Americanus — Barn swallow, Wilson.
——— *riparia* — Bank do.
——— *pelasgia* — Chimney do.
——— *purpurea* — Purple martin.
Caprimulgus Virginianus, L. — Whip-poor-Will.
——— *porpetue, Vieil.* — Night hawk.
Alauda alpestris, L. Wils. — Shore lark.
——— *rubra,* — Red lark.
Parus atricapillus — Black capped titmouse.
Emberiza Americana, L. Wils. — Black throated bunting.
Fringilla (*Ploceus, Cuv.*) *erythrocephala* — Towhee bunting.
——— *socialis, Wilson.* — Chipping sparrow.
——— *oryzivora* — Rice bird.
——— *pecora, Wils.* (*Emberiza*) — Cow bird.
——— (*Cardualis, Cuv.*) *tristis* — Yellow bird.
——— *melodia, Wilson.* — Song sparrow.
——— *purpurea* — Purple finch.
——— *Hudsonia* — Snow bird.
——— (*Linaria, Bech.*) *linaria* — Lesser redpoll.
Loxia (*Vidua, Cuv.*) *cardinalis* — Cardinal gross beak.
——— (*do. do.*) *Ludoviciana* — Rose-breasted gross beak.
——— (*Corythus, Cuv.*) *enucleator* — Pine gross beak.
——— *Curvirostra Americana, Wilson.* — American cross beak.

Gracula (*Icterus, Cuv.*) *quiscala* — Purple grackle.
Oriolus (*Zanthornus, Cuv.*) *phœniceus* — Red-winged starling, Wilson.
——— (*Zanthornus, Cuv.*) *Baltimoreus* — Baltimore bird.
——— (*do.* *do.*) *spurius* — Orchard oriole.
——— (*do.* *do.*) *icterocephalus* — Yellow-headed oriole.
Sturnus Ludovicianus — Meadow-lark, Wils. The S. torquatus of Stephens seems to be the male of this species.
Silta Carolinensis — White-breasted nuthatch, Wilson.
—— *varira* — Red-bellied do. do.
Corvus corax — Raven.
——— *corone* — Crow.
——— (*Pica, Cuv.*) *pica* — Magpie.
——— (*Garrulus, Cuv.*) *cristatus* — Blue jay.
Trochilus colubris — Ruby-throated humming-bird.
Alcedo alcyon — Belted kingfisher.
Picus pileatus — Pileated woodpecker, Lath.
—— *erythrocephala* — Red-headed woodpecker.
—— *auratus* — Gold-winged do.
—— *pubescens* — Downy do.
—— *villosus* — Hairy do.
—— *Carolinus* — Red-bellied do.
Psittacus Carolinensis — Caroline perroquet.
Meleagris gallipavo — Turkey.
Tetrao cupido — Pinnated grouse.
——— *umbellus* — Ruffed do.
——— *phasianellus* — Long-tailed grouse.
——— (*Perdix*) *Virginianus* — Virginian partridge, Wilson.
Columba migratoria — Passenger pigeon. (*C. Canadensis* is the female, Temm.)
——— *Carolinensis* — Caroline pigeon or dove.
Charardrius vociferus — Kildeer.

Charardrius pluvialis — Golden plover.
Ardea (*Grus, Cuv.*) *Americanus*—Hooping crane.
——- (*do.* *do.*) *Canadensis* — Sandhill do.
——- *herodias* — Great heron.
——- *virescens* — Green heron.
——- *nycticorax* — Night-heron.
Numenius longirostra — Long-billed curlew.
Scolopax minor — Little woodcock.
——— (*Totanus*) *semipalmata* — Willet.
——- (*do*) *melanoleucus, Vieil.* — Stone curlew.
——- (*do*) *vociferus* — Telltale godwit.
Tringa solitaria, Wilson. — Solitary sandpiper.
——— *Bartramia, Wilson.* — Bartram's sandpiper.
——— *semipalmata, Ord.* — Semipalmated sandpiper.
Scolopax flavipes, Gm. Wils. — Yellow-shanks snipe.
——- *fedoa, L. Wilson.* — Great marbled godwit.
Recurvirostra Americana — American avocet.
Colymbus glacialis — Great northern diver.
——— (*Podiceps, Lath.*) *cornutus* — Horned grebe.
Fulica Americana — Common coot.
Larus ridibundus ? — Laughing gull.
Sterna aranea, Wilson. — Marsh tern.
——- *minuta* — Lesser tern.
Pelecanus erythrorhynchos — Rough-billed pelican.
———*fuscus* — Brown pelican.
——— (*Phalacrocorax, Briss.*) *carbo* — Corvorant.
Anas (*Cygnus, Meyer*) *cygnus* — Swan.
—— (*do.*) *Canadensis* — Canada goose.
—— (*Anser, Briss.*) *hyperborea* — Snow goose.
—— (*do*) *bernicla ?* — Barnacle goose.
—— (*do.*) *albifrons* — White-fronted goose.

Anas discors — Blue-winged teal.
—— *albeola* — Buffle-headed duck.
—— *boschus* — Wild duck.
—— *sponsa* — Summer duck.
—— *marila* — Scaup duck.
—— *acuta* — Pin-tailed duck.
—— *glacialis* — Long-tailed duck.
—— *clangula* — Golden-eye.
—— *Americana* — American widgeon.
Mergus serrator — Red-breasted merganser.
——— *cucullatus* — Hooded do.

REPTILIA.

Testudo clausa.—This is our common land tortoise. It rarely, if ever, enters the water voluntarily, and is therefore decidedly terrestrial.

Testudo (Emys, Brogni.) geographica, Lesueur.
——— *(do. do.) serpentaria*—Serpent tortoise.
——— *(Trionix, Geoff.) ferox*—Fierce tortoise.
Lacerta (Agama) undulata, Daud.
——— *(Scincus) 5-lineatus.*
Coluber constrictor— Racer.
——— *ordinatus*—Garter snake.
——— *heterodon*—Hog-nose snake.
Crotalus horridus, L.—Banded rattlesnake.
——— *durissus, L.*—Diamond rattlesnake.
Rana pipiens, Daud. (R. Catesbeana, Shaw.)—Bull-frog—Ohio.
Rana helecina, Kalm. Daud. (R. pipiens, Schreb. Shaw.)—Shad-frog—Ohio.
Rana clamata, Daud.

—— *(Hyla) occularis, Daud.*—On the Ohio, near Shippingsport. This species is subject to vary considerably. In addition to the lateral vitta, it has sometimes three dorsal vittæ: other specimens have a remarkable cruciform mark on the back.

Rana (Hyla) femoralis, Daud.—Ohio.
—— *(Bufo) musicus*—Common toad.

Salamandra subviolacea, Barton — near Shippingsport.
——— *longicauda, Green* — near Pittsburgh.
——— *rubra, Daud.* — Ohio.
——— *cinerea, Green* — near Shippingsport.
——— (*Triton, Laur.*) *Alleganiensis* (*Salam. gigantea, Barton* — Pittsburgh.

The following observations were made, relative to the arrival and departure of birds at Engineer Cantonment. A few notes are added, which were made at Pittsburgh and other places.

Vultur aura — Arrived April 2. 1820. On the Ohio, observed May 9. 1819.
Falco haliætus —Flying north May 17. 1820.
—— *furcatus* —Was seen 20.
The *Falco* and *Strix* families generally winter here.
Tanagra rubra— Arrived May 1. 1820. At Pittsburgh, arrived April 29. 1819.
Muscicapa olivacea arrived April 30. 1820.
——— *cantatrix* — 30.
——— *ruticilla* — 28. 1820. On the Ohio, observed May 8. 1819.
Muscicapa fusca arrived March 22. 1820.
——— *pipiri* — May 7. 1820. On the Ohio, observed May 8. 1819.
Turdus fuscus arrived April 28. At Pittsburgh the 14th.
Turdus aurocapillus arrived April 26. 1820.
——— *aquaticus* — 26.
——— *migratorius* — 11.
———*felivox* observed on the Ohio, May 8. 1819.
——— *rufus* do. do. 2. 1820.
Certhia palustris arrived April 15. 1820.
Sylvia striata — 26.
—— *azurea* — 28.
—— *sialis* — a few remain all winter.
Hirundo pelasgia arrived May 1. 1820. At Pittsburgh, arrived April 27. 1819.

Hirundo purpurea arrived March 30. 1820. At Pittsburgh. April 14. 1819.

Hirundo Americana — at Pittsburgh, arrived April 21. 1819.

Caprimulgus Virginianus arrived April 19. 1820. At Pittsburgh, heard May 5. 1819.

Caprimulgus porpetue arrived May 16. 1820. On the Ohio, observed May 6. 1819.

Caprimulgus rufus, Vieil. — heard on the Ohio, June 2. 1819.

Parus articapillus — all winter.

Fringilla erythrocephala arrived March 22. 1819.

———-- *purpurea* seen Feb. 28.

———-- *Hudsonica* departing April 11.

———-- *oryzivora* arrived May 14.

———-- *linaria* — Feb. 1.

———-- *tristis* remains during the winter.

Loxia Ludoviciana, observed May 1. and 6. 1819.

——- *Americana* — Feb. 21. 1819.

——- *cardinalis* — on the Ohio, May 8. 1819.

——- *enunclea tor* — occasionally seen during the winter.

Oriolus icterocephalus, observed May 14. 1820.

——— *phœniceus* — March 1.

——— *Baltimoreus*, observed near Pittsburgh, April 29. 1819.

Sturnus Ludovicianus arrived April 5. 1820.

Sitta Carolinensis remains all winter.

Corvus pica retired northward, March 23. 1820.

——- *corax* — the young nearly able to fly, May 12. 1820.

Trochilus colubris arrived May 18. 1820. On the Ohio, May 6. 1819.

Alcedo alcyon arrived March 20. 1820.

Picus erythrocephalus arrived March 20. 1820.

——- *auratus* and some others remain all winter; but the *erythrocephalus* is entirely migratory.

Picus pileatus — seen Feb. 28. 1820.

Psittacus Carolinensis—seen several times during the winter: near Louisville, May 25. 1819.

Columba migratoria arrived May 2. 1820.

——— *Carolinensis* arrived April 30. 1820.

Ardea Americanus arrived March 19. 1820.

——— *virescens* seen on the Ohio May 6. 1819.

——— *Canadensis* arrived May 24. 1820.

Numenius longirostra arrived April 1. 1820. Was seen on the top of the Alleghany mountain March 24. 1819.

Curvirostra Americana—seen Feb. 20. 1820.

Scalopax vociferus arrived March 19. 1820. At Pittsburgh, observed May 5. 1819.

Scolopax semipalmata arrived May 6. 1820.

——— *minor* — April 8.

Tringa solitaria — 30. 1820. At Pittsburgh, observed May 15. 1819.

Colymbus cornutus arrived May 5. 1820.

Larus ridibundus—in large flocks, flying northward, May 4. 1820. They were seen at Pittsburgh April 3. 1819.

Sterna minuta arrived April 2. 1820.

Pelecanus erythrorhynchos arrived April 8. 1820.

——— *carbo* arrived April 10. 1820. At Pittsburgh, arrived May 5. 1819.

Anas cygnus—flying to the north Feb. 22. 1820.

——— *canadensis* do. do. 21.

——— *acuta* shot 28.

——— *Americana* shot March 3.

——— *sponsa*, with their young, May 30. 1819.

The great emigration of geese, swans, ducks, and cranes, commenced on the 22d of February, and terminated the latter end of March, 1820.

APPENDIX B.

INDIAN LANGUAGE OF SIGNS.

(Referred to in page 185.)

1. *Sun*—The fore-finger and thumb are brought together at tip, so as to form a circle, and held up towards the sun's track. To indicate any particular time of the day, the hand with the sign of the sun, is stretched out towards the east horizon, and then gradually elevated, to show the ascent of that luminary, until the hand arrives in the proper direction, to indicate the part of the heavens in which the sun will be at the given time.

2. *Night, or sleeping*—The head, with the eyes closed, is laterally inclined for a moment upon the hand. As many times as this is repeated, so many nights are indicated; very frequently the sign of the sun is traced over the heavens, from east to west, to indicate the lapse of a day, and precedes the motion; it also precedes the following—

3. *Darkness*—The hands extended horizontally forwards, and back upwards, pass one over the other, two or three times touching it.

4. *Combat*—The clenched hands are held about as high as the neck, and five or six inches asunder, then waved two or three times laterally, to show the advances and retreats of the combatants; after which the fingers of each hand are suffered to spring from the thumb towards each other, as in the act of sprinkling water, to represent the flight of missiles.

5. *Prisoner*—The fore finger and thumb of the left hand are held in the form of a semicircle, opening towards and near the breast, and the fore finger

of the right representing the prisoner, is placed upright within the curve, and passed from one side to another, in order to show that it will not be permitted to pass out.

6. *Man* — A finger held vertically.

7. *Seeing* — The fore-finger, in the attitude of pointing, is passed from the eye towards the real or imaginary object.

8. *Seen, or discovered* — The sign of a man, or other animal, is made; after which the finger is pointed towards, and approached to your own eye; it is the preceding sign reversed.

9. *Entering a house or lodge* — The left hand is held with the back upward, and the right hand also with the back up, is passed in a curvilinear direction down under the other, so as to rub against its palm, then up on the other side of it. The left hand here represents the low door of the skin lodge, and the right, the man stooping down to pass in.

10. *Theft* — The left fore-arm is held horizontally, a little forward or across the body, and the right hand passing under it with a quick motion, seems to grasp something, and is suddenly withdrawn.

11. *Hunting* — The fore-finger is brought near the eye, and placed in the attitude of pointing; it is then wagged from side to side, the eye following its devious motion, and seeming to look in the direction indicated. Sometimes the hand is extended far before the eye, and the same motion is given to the finger.

12. *Pretty* — The fingers and thumb, so opposed as to form a curve, are passed over the face nearly touching it, from the forehead to the chin, then add the sign of *Good*, No. 42.

13. *Eating* — The fingers and thumb are brought together in opposition to each other, into something of a wedge shape, and passed to and from the mouth four or five times within the distance of three or four

inches of it, to imitate the action of food passing to the mouth.

14. *Drinking, or water*—The hand is partially clenched, so as to have something of a cup shape; and the opening between the thumb and finger is raised to the mouth, as in the act of drinking. If the idea of water only is to be conveyed, the hand does not stop at the mouth, but is continued above it.

15. *Enough, or a bellyful*—The sign for eating is first made; then the fore finger and thumb are opposed to each other so as to form a semicircular curve, which is elevated along the body from the belly to the neck, in order to indicate that the interior is filled with food up to that part.

16. *Squaw*—The hands are passed from the top down each side of the head, indicating the parting of the hair on the top, and its flowing down each side.

17. *The discharging of a gun*—Is indicated by slapping the back of the right hand, partially closed, into the palm of the left.

18. *Death*—By throwing the fore finger from the perpendicular into a horizontal position towards the earth, with the back downwards.

19. *Killing*—The hands are held with the edge upwards, and the right hand strikes the other transversely, as in the act of chopping. This sign seems to be more particularly applicable to convey the idea of death, produced by a blow of the tomahawk or war-club.

20. *Bison*—The two fore fingers are placed near the ears, projecting, so as to represent the horns of the animal.

21. *Surrounding the bison*—The sign No. 20. is first made; the hands, with the fore fingers and thumbs in a semicircle, are then brought two or three times together.

22. *Discharging the arrow*—The hands are placed

as in the attitude of drawing the arrow in the bow, (this is also the sign for the bow) and its departure is indicated by springing the fingers from the thumbs, as in the act of sprinkling water.

23. *To speak* — The motion is like sprinkling water from the mouth by springing the fore finger from the thumb, the hand following a short distance from the mouth at each resilience, to show the direction of the word, or to whom it is addressed; this motion is repeated three or four times.

24. *Haranguing* — The above motion repeated rapidly, the hand at each motion pursuing a different direction, to show that the talk is addressed to various persons.

25. *Quantity, or great number* — The hands and arms are passed in a curvilinear direction outwards and downwards, as if we were showing the form of a large globe; then the hands are closed and elevated, as if something was grasped in each hand, and held up about as high as the face.

26. *Exchange* — The two fore fingers are extended perpendicularly, and the hands are then passed by each other transversely in front of the breast, so as nearly to exchange positions.

27. *Inquiry* — The hand held up with the thumb near the face, and the palm directed towards the person of whom the inquiry is making; it is then rotated upon the wrist two or three times edgewise, to denote uncertainty.

28. *Truth* — The fore finger passed, in the attitude of pointing, from the mouth forward in a line curving a little upward, the other fingers being carefully closed.

29. *Lie* — The fore and middle fingers extended passed two or three times from the mouth forward they are joined at the mouth, but separate as they depart from it, indicating that the words go in different directions.

30. *It is so*—The motion is somewhat like 28., but the finger is held rather more upright, and is passed nearly straight forward from opposite the breast; and when at the end of its course, it seems gently to strike something, though with a rather slow and not suddenly accelerated motion.

31. *Sit down*—The fist is clenched, and the motion of it is then the same as if it held a staff, and gently stamped it upon the earth two or three times.

32. *Travelling with great rapidity*—The hands are held edge up, extended forward and a little sideways, one in advance of the other, though parallel; they then are agitated a little in the manner of a fan, though with a much more rapid and not so wide a motion, the arms being at rest.

33. *Running*—The arm nearly doubled upon itself, and then the elbow thrown forward and backward, as in the act of running.

34. *Riding on horseback*—The index and middle finger of the right hand are straddled over the left index finger, representing the rider and the horse; these are then jolted forward, to represent the trotting motion of the horse.

35. *Knife*—Hold the left hand clenched near the mouth, as if it held one end of a strip of meat, the other end of which was between the teeth; then pass the edge of the right hand, as in the act of cutting, obliquing a little upwards from right to left between the other hand and mouth, so as to appear to divide the supposed meat.

36. *Awl*—The left fore finger is extended, and the right, also extended, is placed across it, and is then turned on its axis, so as to imitate the action of the awl in making a hole.

37. *My offspring*—If an Indian wishes to tell you that an individual present is his offspring, he points to the person; and then, with the finger still extended,

passes it forward from his loins in a line curving downwards; then slightly upwards; sometimes saying, "That is my child, *illum minxi.*" Dashinga-shinga-we-weet-tah-ohn-na-je.

38. *Strength* — The hands are clenched; the left fore arm is held almost perpendicularly near the breast, so that the fist is nearly opposite to the throat; the right arm is then carried up between the left and the breast, and continued on over the left fist to the outside of the latter; the right arm is then brought down so as to have the same direction with the other, and the fists rest opposite to each other, in a line from the breast. This motion resembles the act of wringing a thick towel. If he would say, "I am strong," he strikes himself upon the breast two or three times with his fist, previously to the motion above described. If he would say, "You are strong," he previously points to you, &c.

39. *Fire* — The act of striking fire with the flint and steel is represented; after which the ascent of the smoke is indicated, by closing the fingers and thumb of the right hand, holding them in a vertical position, with the hand as low as convenient; the hand is then gradually elevated, and the fingers and thumb a little expanded, to show the ascent and expansion of the volume of smoke.

40. *Rabbit* — The fore and little fingers of the right hand are extended, representing the ears of the animal; the hand is then bobbed forward to show the leaping motion of the animal.

41. *Deer* — The fore finger of the right hand is extended vertically, with the back towards the breast; it is then turned from side to side, to imitate the motion of the tail of the animal when he walks at his leisure.

42. *Good* — The hand held horizontally, back upwards, describes with the arm a horizontal curve outwards.

43. *Be quiet, or be not alarmed, or have patience.*— The palm of the hand is held towards the person.

45. *I will kill you*— Direct the right hand towards the offender, and spring the fingers from the thumb, as in the act of sprinkling water.

46. *Fish*— Hold the upper edge of the hand horizontally, and agitate it in the manner of a fan, but more rapidly, in imitation of the motion of the tail of the fish.

47. *Poor*—The two fore fingers extended, with the right, as if it was a knife, imitate the motion of cutting the flesh off of the left finger, beginning towards the tip, and cutting with a quick motion directed towards the base; at the same time turn the left finger a little round, so as to expose the different parts to the action of cutting; intimating that the flesh has diminished from starvation.

48. *House or lodge*—The two hands are reared together in the form of the roof of a house, the ends of the fingers upward.

49. *Husband, companion, or in company*— The two fore fingers are extended and placed together, with their backs upward.

50. *Snow*— The hand is held up about as high as the head, with the fingers suffered to dangle downwards; it is then bobbed a little up and down, as if to throw off drops from the ends of the fingers.

51. *Rain*—The sign for *water* (No. 14.) precedes that for *snow*.

52. *Robe*—The hands are placed near the shoulders, as if holding the ends of the robe, and then crossed, as if drawing the robe tight around the shoulders.

53. *The coming of a person from a distance*— Place the fore finger in a vertical position, with the arm extended towards the point from which the person came, or is to come; then bring it gradually near the

body, but not in contact with it; or if he continued on, carry it in the direction he passed.

54. *Snake*—The fore finger is extended horizontally, and passed along forward in a serpentine line. This is also used to indicate the Snake nation of Indians.

55. *Crow nation of Indians*—The hands held out each side, and striking the air in the manner of flying.

56. *Light*—Make the sign of the sun in the eastern horizon, and then extend the hands together, with the palm upwards, and carry them from each other outwards.

57. *Flat-head nation*—One hand placed on the top of the head, and the other on the back of the head.

58. *Pierced-nose nation*—The finger extended, pass it horizontally by the nostrils.

59. *Trade*—First make the sign of *exchange*, (No. 26.) then pat the left arm with the right finger, with a rapid motion from the hand passing it towards the shoulder.

60. *Sioux nation*—The edge of the hand passed across the throat, as in the act of cutting that part.

61. *Black-foot nation*—The finger and thumb encircle the ancle.

62. *Arrapaho nation*—The fingers of one hand touch the breast in different parts, to indicate the tattooing of that part in points.

63. *Carrying a pack*—The hands are placed each side of the head, as if they held the strap of the *hoppas*, which passes round the forehead, in order to relieve that part, by supporting a portion of the weight of the burden; with this motion, two or three slight inclinations of the head and corresponding movements of the hands are also made.

64. *Pretty*—Another sign, beside that marked

No. 43., is the following: curve the fore finger of the right hand, and place the tip on the ridge of the nose between the eyes, so as to represent a high Roman nose; then bring down the hand in a curvilinear manner, until the wrist touches the breast; after which add the sign, No. 42.

65. *No, not, or none*—The hand waved outwards, with the thumb upward. For *yes*, see No. 30.

66. *Destroyed, or all gone, no more*—The hands held horizontally, and the palms rubbed together, two or three times round; the right hand is then carried off from the other, in a short horizontal curve.

67. *Anger*—The fingers and thumb of the right hand, with the ends together, and near the breast; then turn the hand round two or three times, so as to describe verticle circles; indicating that the heart is disturbed.

68. *Dissatisfaction, or discontent*—The extended finger placed transversely before the situation of the heart, rotate the wrist two or three times gently, forming a quarter of a circle each time.

69. *Indecision*—The index and middle fingers extended and diverged, place them transversely before the situation of the heart, and rotate the wrist two or three times gently, forming each time a quarter of a circle.

70. *Fool*—The finger is pointed to the forehead, and the hand is then held vertically above the head, and rotated on the wrist two or three times.

71. *Swiftness*— The two index fingers are held parallel together, and pointing forward; the right one is then passed rapidly forward.

72. *Shienne nation*— With the index finger of the right hand proceed as if cutting the left arm in different places, with a sawing motion from the wrist upwards, to represent the cuts or burns on the arms of that nation.

73. *Left-handed*— The left hand clenched is held

up before the neck; the elbow is then brought in to the side, at the same time giving to the fore-arm a twist, so as to bring the closed palm opposite the breast.

74. *I do not understand*—The fingers and thumb of the right hand brought together near their tips, and then approached and receded to and from the ear two or three times, with a quick motion, made within the distance of two or three inches; finish with the sign, No. 65.

75. *I understand*—The same sign with the preceding, excepting the No. 65., which is omitted. The motion of the fingers is designed to represent the sound entering the ear.

76. *Love or affection*—The clenched hand pressed hard upon the breast.

77. *Me (I)*—The clenched hand struck gently, and with a quick motion, two or three times upon the breast. Or, the fingers brought together, are placed perpendicularly upon the breast.

78. *You*—Is expressed by simply pointing at the persons, and the same for other objects within view.

79. *Multitude*—First indicate a man, No. 6., or whatever object it may be, and then the sign of a great many, No. 25.

80. *Opposite*—A clenched hand held up on each side of the head, at the distance of a foot or more from it.

81. *Hill*—A clenched hand held up on the side of the head, at the distance of a foot or more from it.

82. *River*—The hand, in the form of a scoop or or ladle, is carried to the mouth, as if conveying water, and then drawn along in a horizontal line, with the edge downward, about the height of the breast.

83. *Counting, or enumeration*—The fingers or thumbs expanded, count ten. In order to proceed with the enumeration by tens, the hands must be

clenched; and if again expanded, it counts twenty, and so on, the hands being clenched between every ten. In order to indicate the digits, clench the hands, and extend the little finger of the left hand for one; extend also the ring finger for two, and so on; the thumb for five. These must remain extended, whilst the thumb of the right is extended for six, &c. Any number within five, above any number of tens, is indicated by clenching the left hand and crossing the right over it, with the requisite number of fingers extended. For the number of sixteen, exhibit the sign of ten, and then extend four fingers, and the two thumbs in the order of enumeration; for seventeen, proceed by extending the fore finger of the right hand, and so on to twenty. In this manner any sum can be denoted, always holding the backs of the hands upward. When enumerating a small number, where a considerable exertion of the memory is requisite, the Indians extend the left hand with the palm upward; whilst, with the index of the right, the fingers are successively bent in to the palm, beginning as before with the little finger; and the greater difficulty in recalling to mind the numbers or events, the more apparent resistance is offered to the inflection of the finger.

84. *A Chief*—The fore finger of the right hand extended, pass it perpendicularly downward; then turn it upward, and raise it in a right line as high as the head.

85. *Bad*—Make the sign of *good* (No. 42.), and then that of *not* (No. 65.)

86. *Gun*—Hold out the left hand, as in the act of supporting the gun when directed horizontally, and with the right appear to cock it.

87. *Gunpowder*—Appear to take up a pinch of the powder, and to rub it between the finger and thumb; then turning the hand, spring the fingers from the thumb upward, so as to represent the exploding of the powder.

88. *Ball, or bullet* — Make the sign of the exploding of the powder; then grasp the fore finger of the hand with the remaining fingers and thumb, so that the tip of it will so extend beyond them as to represent the ball.

89. *Scissors* — With the fore and middle fingers, imitate the opening and shutting of the blades of the scissors.

90. *Looking-glass* — The palm of the hand held before the face, the fingers pointing upward.

91. *Writing* — The act of writing is imitated by the finger, in the palm of the opposite hand.

92. *Brother* — The 'sign for a man (No. [illegible].), succeeded by placing the ends of the fore and middle fingers of one hand together in the mouth.

93. *Sister* — The sign for a squaw (No. 16.); after which place the fingers in the mouth, as in No. 92.

94. *Cold* — The arms, with clenched hands, held up before the breast, thrown into a tremulous motion as if shivering with cold.

95. *Cowardice* — The head stooped down, and the arm thrown up to protect it; a quick motion.

96. *Marching, or travelling moderately* — The hand held vertically as high as the neck, with slightly divided fingers, and rocked edgewise forward and backward upon the wrist, extending the arm a little forwards. This sign resembles that for *inquiry* (No. 27.), but differs in the direction of the motion of the hand.

97. *The return of a party through fear* — Begin with the preceding motion; then draw the tips of the fingers and thumb together, and retreat the hand to the body.

98. *Hunting shirt* — The fore finger and thumb, so opposed as to form a curve, are passed near the surface of the body, from the forehead to the abdomen

99. *Surprise or astonishment* — Is indicated by placing the hand upon the mouth, to show tha

language is inadequate to communicate their sensations.

100. *Calumet dance* — The hand extended with the edge upward, and with the arm waved sideways, with a motion like that of a swing.

101. *Beaver trap* — The two fore fingers brought suddenly together, in a parallel manner, so as to represent the snapping of the steel trap.

102. *Stone* — Close the right hand, and strike the palm of the left hand two or three times with it.

103. *Give it to me* — The hand extended in a pointing position towards the object in request; then brought towards the body with the finger raised vertically, and laid against the breast.

104. *Mountains* — When speaking of the Rocky Mountains, Tarrarecawaho held up the fingers of his left hand, a little diverging from each other; and to convey the idea of the streams flowing from them, he placed the index finger of his right hand alternately between each two of them, and drew it away in a serpentine manner.

The following signs are extracted from an essay by William Dunbar, Esq., published in the sixth volume of the Transactions of the American Philosophical Society. It will be observed that some of them differ essentially from those which we obtained, and that we have omitted ten of them which correspond with those we have given.

White — With the under side of the fingers of the right hand rub gently upon that part of the left hand which corresponds with the knitting of the bones of the fore finger and thumb.

Egg — The right hand held up with the fingers and thumb extended, and approaching each other as if holding an egg within.

The same, or similar to what went before — Place the two fore fingers parallel to each other, and push them forward a little.

Snow—Begin with the sign of rain, then the sign of air or cold, and conclude with the sign of white.

Ice—Begin with the sign of water, then of cold, then the earth; and, lastly, a stone, with the sign of sameness or similarity.

Hail—Begin with the sign of water, then the sign of cold, next the sign of a stone, then the same, then the sign of white; and, lastly, conclude, with the sign of an egg; all which, combined, give the idea of hail.

Frost—Begin with the sign of water, then the sign of night or darkness, then the sign of cold, then the sign of white; and, lastly, the earth.

Cloud—Begin with the sign of water; then raise the two hands as high as the forehead, and placing them with an inclination of 15°, let them gently cross one another.

Fire—The two hands brought near the breast, touching or approaching each other, and half shut; then moved outwards moderately quick, the fingers being extended, and the hands a little separated at the same time, as if to imitate the appearance of flame.

Bring, fetch, or give me—The hand half shut, with the thumbs pressing against the fore finger, being first moderately extended either to the right or left, is brought with a moderate jerk to the opposite side, as if something was pulled along by the hand. Consequently, the sign of water preceding this, would convey the expression, "Give me water."

Earth—The two hands open and extended, brought horizontally near each other opposite to either knee, then carried to the opposite side, and raised in a curve movement, until brought round and opposite to the face.

Cold, or Air—The right hand held perpendicularly upwards, and brought forwards with a tremulous or vibratory motion, until it passes beyond the face.

Big, great, or large—The two hands open, placed wide apart on each side of the body, and moved forwards.

Fear, to be afraid, to cause fear — The two hands, with the fingers turned inwards, opposite to the lower ribs; then brought upwards with a tremulous movement, as if to represent the common idea of the heart rising up to the throat: the three last signs, placed in the order given, would convey the idea of a violent hurricane.

Moon — The thumb and finger open are elevated towards the right ear; this last sign is generally preceded by the sign of the night, or darkness.

Heat — The two hands raised as high as the head, and bending forwards horizontally, with the points of the fingers curving a little downwards.

Clear — The hands are uplifted, and spread both ways from the head.

Thunder — The sign of rain, accompanied by the voice imitating the rumbling sound of thunder.

Lightning — First, the sign of thunder; then open or separate the hands; and, lastly, bring the right hand down towards the earth, in the centre of the opening just made.

Male and female — Note: to distinguish between the male and female, in all cases add for the male a fillip with the fore finger of the right hand on the cheek; and, for the female, bring the two hands open towards the breast, the fingers approaching, and then move them outwards.

Dunghill fowl — Bring the thumb and fingers of the right hand together; and holding the hand moderately elevated, move it across, imitating the motion of the head of a cock in walking.

Turkey—The open hands brought up opposite to the shoulders, and imitating slowly the motion of the wings of a bird; to which add the last sign.

Duck—The last sign; then the sign of water; and, lastly, the sign of swimming; which last is performed by the fore finger of the right hand extended outwards, and moved to and fro.

Horse—The right hand, with the edge downwards, the fingers joined, the thumb recumbent, extended forwards.

Deer—The right hand extended upwards by the right ear, with a quick puff from the mouth.

Man—With the fore finger of the right hand extended, and the hand shut, describe a line, beginning at the pit of the stomach, and passing down the middle of the body as far as the hand conveniently reaches, holding the hand a moment between the lower extremities.

Woman—The finger and thumb of the right hand partly open, and placed as if laying hold of the breast.

Child—Bring the fingers and thumb of the right hand, and place them against the lips; then draw them away, and bring the right hand against the fore of the left, as if holding an infant. Should the child be male, prefix the sign of a man before the last sign; and, if a female, do so by the sign of the woman.

Boy—Bring the fingers and thumb of the right hand to touch the lips; then extend the hands and make the sign of man; then raise the hand, with the fingers upwards, placed at the height of a boy.

Girl—Begin with the above sign, and make the sign of woman; and then raise the hand to the height of the girl.

You—The hand held upwards obliquely, and pointing forward.

He, or another—The fore fingers extended, and the hands shut, and fingers brought over one another, or nearly touching, and then separated moderately quick.

Many, or much—The flat of the right hand patting on the back of the left hand; which is repeated in proportion to the greater or lesser quantity.

Know—The fore finger of the right hand held up nearly opposite to the nose, and brought with a half-turn to the right, and carried a little outwards. Place any of the articles before the last sign, which will then signify, "I know, you know, he knows;"—both hands being made use of in the manner described, implies, "to know much."

Now, or at present—The two hands forming each a hollow, and brought near each other, and put in a tremulous motion upwards and downwards.

Come here—The hand stretched outwards, with the palm under, and brought back with a curve motion downwards, and inclining to the body.

Go—The back of the hand stretched out and upwards.

What say you—The palm of the hand upwards, and carried circularly outwards and depressed.

No, nothing, I have none—The hand held up before the face, with the palm outwards, and vibrated to and fro.

From whence come you? say—First, the sign of you; then the hand extended, open, and drawn to the breast; and, lastly, the sign of, "what say you?"

Come—The fore-finger moved from right to left, with an interrupted motion, as if imitating the alternate movement of stepping.

Mine—The hand shut, and held up to the view.

House—The hand half open, and the fore finger extended and separated; then raise the hand upwards, and give it a half turn, as if screwing something.

Done, or finished—The hands placed edge up and down, parallel to each other; the right hand without; which latter is drawn back, as if cutting something.

Spring season — The sign of cold, to which add the last sign of being done or finished.

Body — The hands with the fingers pointed to the lower part of the body, and then drawn upwards.

Hair — The movement of combing.

APPENDIX C.

INDIAN SPEECHES.

Speeches of Pawnees, Pawnee Loups, and Pawnee Republicans, at a council held at the Engineer Cantonment, October, 1819.

In concluding his address, on opening the Pawnee council, Major O'Fallon requested them, if any subject rested heavily on their minds, to come forward and express themselves without fear. Long Hair (Tarrarecawaho,) immediately arose, and with a firm step placed himself in the middle of the area. He stood for a short time immovable, then slowly advanced nearer to the agent, and with a very loud, powerful voice, fierce countenance, and vehement gesticulation, thus addressed him:

Father, The Master of Life placed me on this land, and what should I fear? Nothing. You are a chief, and I am a chief.

Father, Look at me, and see if I deceive you, when I say that I have but one intention, and that is a good one.

Father, My heart is strong; I say, my heart is strong.

Father, Those who robbed and whipped your people, I did not see; I was not present.

Father, Those Republican Pawnees are bad people, they have injured the whites, but I have not, and that is the reason why I am not afraid to see you.

Father, We are fond of pipes; we like to travel to our neighbouring nations, and smoke with them.

Father, I am desirous to go now, and hunt the buffaloe; but when the grass comes up in the spring, I hope to see you again.

Father, This medal which you see on my neck, is my father's image. It is dear to me, because he presented and placed it on my neck.

Father, Wherever I have been to visit my father (Governor Clarke), or my fathers, I have heard good talk, and mine has been good also; but there are many here who will not give ear to their words.

Father, I am happy to hear what you say about peace; that we particularly desire, especially with the whites.

Father, Affairs have been bad. I am not a child; I listened to the talk you sent to us, and was therefore not afraid to come and see you. Those whites, and all those people around me, I consider as my children, and am glad to see them.

I tell you that I am poor; who is the cause of it? not myself; it is my young men. That is all I have to say. I give you my hand.

La-ceech-ne-sha-ru, the Knife Chief, a Pawnee Loup.

Father, Here I am before you. You see me. I am poor.

Father, I am a Pawnee wolf, and those you see there (pointing to his band) are Pawnee wolves.

Father, Look at my people, and see if they have any thing belonging to a white man.

Father, I tell you the truth, I am poor.

Father, Amongst my people, I believe, there is not an individual that has injured you. If any one of the other bands can say they have, let them speak.

Father, This medal which hangs upon my breast, I received from my red-headed father below (Governor

Clarke). I listened to his words, and on my return I told them to my people, and they believed.

Father, You see that I am old; but I do not recollect that myself, or any of my people, ever injured any of the whites.

Father, Neither my hands, nor those of my young men, have ever been stained with the blood of the Americans.

Father, That is the reason why I have come to listen again in the words of my father.

Father, That is all I have to say. I have finished.

Major O'Fallon.

Grand Pawnees, and Pawnee Republicans; I am not satisfied with what you have said. What you have said is good, but it is not enough. Until you drive those dogs from among you, I will not consider you in any other light than as dogs.

Pa-ne-ca-he-ga, Fool Robe's son, a Pawnee Republican.

Father, I am a Pawnee Republican.

Father, What you have said is true: the Pawnee Republicans are dogs, they do not listen with their ears.

Father, I have never done ill to a white man myself; I have never even taken a knife from him; and my heart is distressed because my young people will not listen.

Father, It is true what Tar-ra-re-ca-wa-ho has said, that we whipped two white men; we did do it.

Father, I am poor; I say, I am poor.

Father, It is true that it is customary for my people to rob white men, when they go to war, but I never knew them to kill one.

Father, My heart is distressed because my young men will not listen; they have no ears.

Father, The offenders have not ears; they were afraid to come and see you, knowing they had done wrong.

Father, I came without fear, on a good horse, which I present to you. My people were afraid that I should come.

Father, I am without fear. I said, when I set out from my village, why should I fear, if my father strikes me, it is no more than a father does to his child.

Father, We are glad to hear your words; we will make peace; we will return to our village. and see what those dogs will do.

Father, That is all I have to say. I have done.

Chief of the Tappage band of the Grand Pawnees.

Father, I have come to see you; here I am, very poor.

Father, I have seen my father below, and this is my great father I wear round my neck.

Father, When he put this about my neck I heard what he said to me, and have recollected it.

Father, Our young people will not attend to what we say; we talk and repeat to them, but when they lie down, they forget all before midnight.

Father, You ought to have heard whether my band have injured you or not.

Father, There was a time when our hands were red with the blood of your people, but since we have been below, it has been washed off.

Father, We visited our father below; he told us, when we met a white man to treat him well, and let him never fear.

Father, I see you are looking on me; I am poor; I have nothing on me of the make of the whites; I have even turned my buffaloe robe to hide its tarnish.

Father, I came here to listen to your words, to hear what you have told us.

Father, You say there is a God above; I know it; when he is angry I hear him speak (alluding to the thunder).

Father, I consider you equal to him. You are the same to me.

Father, All you see here are your children; they are poor.

Father, That is all I have to say.

Major O'Fallon.

Pawnee chiefs and soldiers; I called you here to adjust the difference that is between us. I called you here to bring the articles which were stolen from my people. I have not yet seen them. I called you here to bring the dogs that stole them; but I have not seen them; I hope that you have brought them.

My eyes have been looking for them, and my ears have been listening, but I am not satisfied.

(The following articles were now given up.

One buffaloe robe, one horse, one pair double-barrelled pistols, one bird-bag, one tomahawk, one axe, one powder-flask, one shot-bag.

Fool Robe's son said, there are many articles lost, which my people took from you, and two of the horses gave out on the road, a few miles from this place.*)

Long Hair.

Those who did the mischief did not come. They were afraid. Here are two of their chiefs.

Major O'Fallon.

Pawnee chiefs and warriors; I wish to know whether or not you are able to punish the offenders;

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* One of the horses has been since found.

whether or not there are good people enough amongst you to punish them. Our soldiers are anxious to march against you, but the chiefs restrain them, lest they injure the innocent. That is the reason why I wish to know if you are not able to punish the bad. Our people do not wish to spill innocent blood. Therefore I desire to place their punishment in your own hands.

I have come to this land, not to spill blood, but to prevent its flowing. I have come to give you rest, and peace, and happiness, not to make war. If your arms are not strong enough, come forward and say so; if you are not chiefs, say so.

Pawnees, If I were to see our troops marching towards your nation, tears would fall from my eyes; because I believe that there are some good men among you, whose blood would immediately flow. Red Skins have called us cowards when we have hesitated to spill blood, when it ought to have been spilt. Even some of your chiefs have insulted our people, thinking they would not resent it. I tell you, Pawnees, that we are tired of submitting to insults. My nation is most powerful, and that is the reason why the Great Spirit restrains our arm.

Come forward, you chiefs, and let me know what is the strength of your arm; my ears are anxious to hear; say, before it is too late, whether you can govern your people or not.

Pe-ta-le-sha-roo, Republican chief.

Father, I am not afraid of these people, these Pawnees you see here. They have never struck me with a whip; (meaning, that when he has chastised his people they have not retaliated upon him.)

Father, I have travelled through all the nations below; they have not injured me.

Father, I have seen people travel in blood. I have travelled in blood myself, but it was the blood of Red Skins, no others.

Father, I have been in all the nations round about, and I have never feared a Red Skin.

Father, I have seen the time when blood flowed upon the ground. It drew tears from many eyes. But I went down to visit my father, (Governor Clarke,) and returned contented.

Father, I have no longer a desire for war. I delight to sit in peace.

Father, When I went to see my father below, although there was danger in the way, I was not afraid to go alone.

Father, But I am now like a squaw, and instead of carrying the mark of a man, I have that of a woman.

Father, My right arm, and that half of my body is white man, and the other only Indian.

Father, When I returned from below, I related to my people what I had seen, but none of them had ears; they would not hear me.

Father, I have often traded with the whites. I always traded fairly, while the Pawnee Loups did not. Here is a trader who knows me (Mr. Pappan).

Father, We will punish the offenders. It is very easy; it is not difficult at all.

Father, I will score the back of him who cut your tent.

Father, It is some time since I have worn this on my neck; I have kept it secreted, because they will not respect it.

Father, After our battles with the people around us, I have gone alone, crying into their villages, and have received no harm. (In other words, Indians have forgiven me for spilling their blood, then why should not the magnanimity of the whites forgive the comparative trifling injuries I have done them.)

Father, When the war-party that robbed your people returned, I was not told of this act. If I had known it, and had demanded the articles, perhaps they would have been given up to me; but they are now so widely distributed that it is impossible to collect them all.

Father, I have never yet whipped my people, but I intend to begin now. I will punish the offenders as soon as I return home.

Father, I am glad to see you writing down all that has been said. When a man dies, his actions are forgotten, but when they are written down, it is not so.

Father, Some among us have had difficulty with the traders, because they would give but very little vermilion, &c. for our furs.

Father, When I have seen a person poor, and I had a horse to spare, or a blanket, I have given it to him.

Father, From this day I undergo a change; I am now an American, and you shall hear that it is true.

Father, If you hear of my being whipped when I return to my village, consider yourself the cause of it, for I will whip those dogs that insulted you as you desire me.

Father, You love your children; I love mine.

Father, Be quick, do what you have to do. If you intend to punish us, let us know it.

(This is an artful, politic Indian. If he is sincere in what he has here said, his change has been a sudden one. When Mr. Dougherty delivered the talk sent by Major O'Fallon to this people, in their village, demanding the stolen articles, &c. this man ridiculed him, saying, that for his part he had nothing but an old pair of shoes that the Red Head had given him, and which he would return.)

Major O'Fallon.

Do you wish to see our warriors among you, to punish these people. I do not wish to see them among you. You, chief of the Pawnee Republicans, (addressing the last speaker,) you say you are able to punish them; I am in hopes that you have not lied; if you have, we must do it ourselves. If my eyes cannot see you punish them, my ears must tell me you have done it.—Yes! my ears must tell me it has been well done, that you have given two stripes for every one that those two unfortunate traders have suffered. And you, Long Hair, that have so strong an arm, assist him, lest our warriors should be obliged to visit you, when yourself might not be distinguished from the others. I do not yet know you as chiefs, but I wish to know you as such; I want to have some proofs that you are chiefs. When I learn that you have punished those who have done wrong, as our chiefs punish, then I will recognize you. You tell me that your stomachs are empty: I will give you something to fill them. You show me your naked skin; my heart will not let me clothe it until this difference is settled. Were I to smoke with you on this day, the smoke would not rise; it would fall to the ground. When I shall be able to cover what is past, and to forget it; when I smile upon you in shaking hands, then perhaps I may give you something to eat and to smoke. I come not to beg your friendship; I come not to ask your land or your skins; I ask nothing of you. Pawnees! I wish to be at peace with you, and all the Red Skins, I tell you again. I know that the Great Spirit has done little for you; he has done much for us. I come to do something for you, when I see you willing to do something for yourselves. I come to give you advice to enable you to live happily, to calm your troubled minds, and to give peace to your troubled heads.

If in reality you punish those who have offended, and my ears tell me so, I will take you by the hand and smoke with you; but if your ears are unwilling to hear my words, close your ears and do not hear them.

I will work a change among you, Red Skins, and when my arm fails, my bones shall whiten on your plains, for my nation to come and bury.

Pawnee Loups, Before you leave this place I will give you something to make your hearts glad.

Long Hair, If you would make me believe that you are disposed to behave well, treat those good people (the Pawnee' Loups) that reside with you kindly. Your arm is stronger than theirs; do not raise it against them, unless they insult you. I hope the day is not far distant, when I shall be able to smile on your people, as I now smile on them.

Pawnees, When you find yourselves unable to punish those dogs among you, think that you hear the sound of those bugles from the hills near your village.

(Presents were now made to the Pawnee Loups; but to the others only a little tobacco was given, and no chiefs were recognized.)